

Figure 1A

094430344660

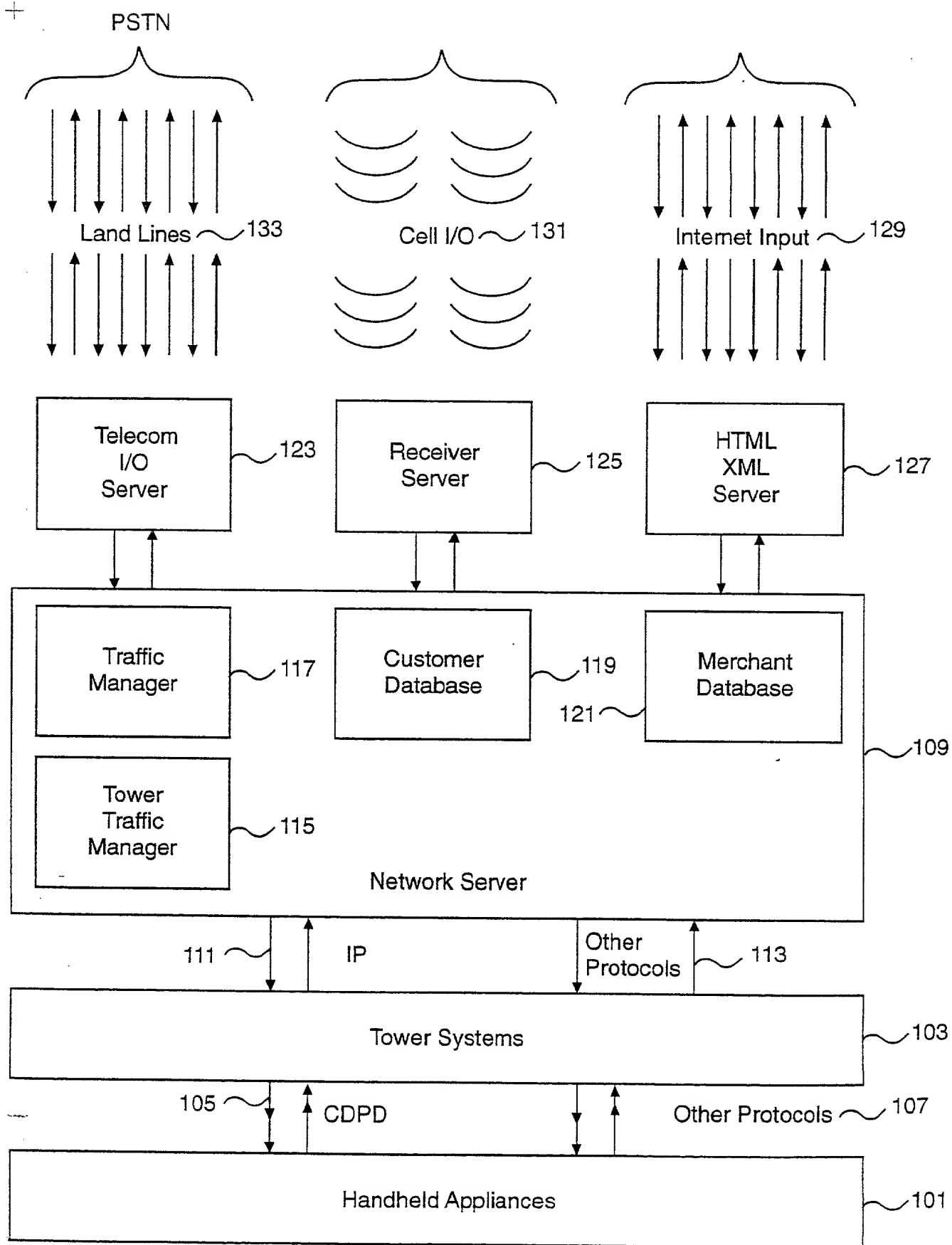


Figure 1B

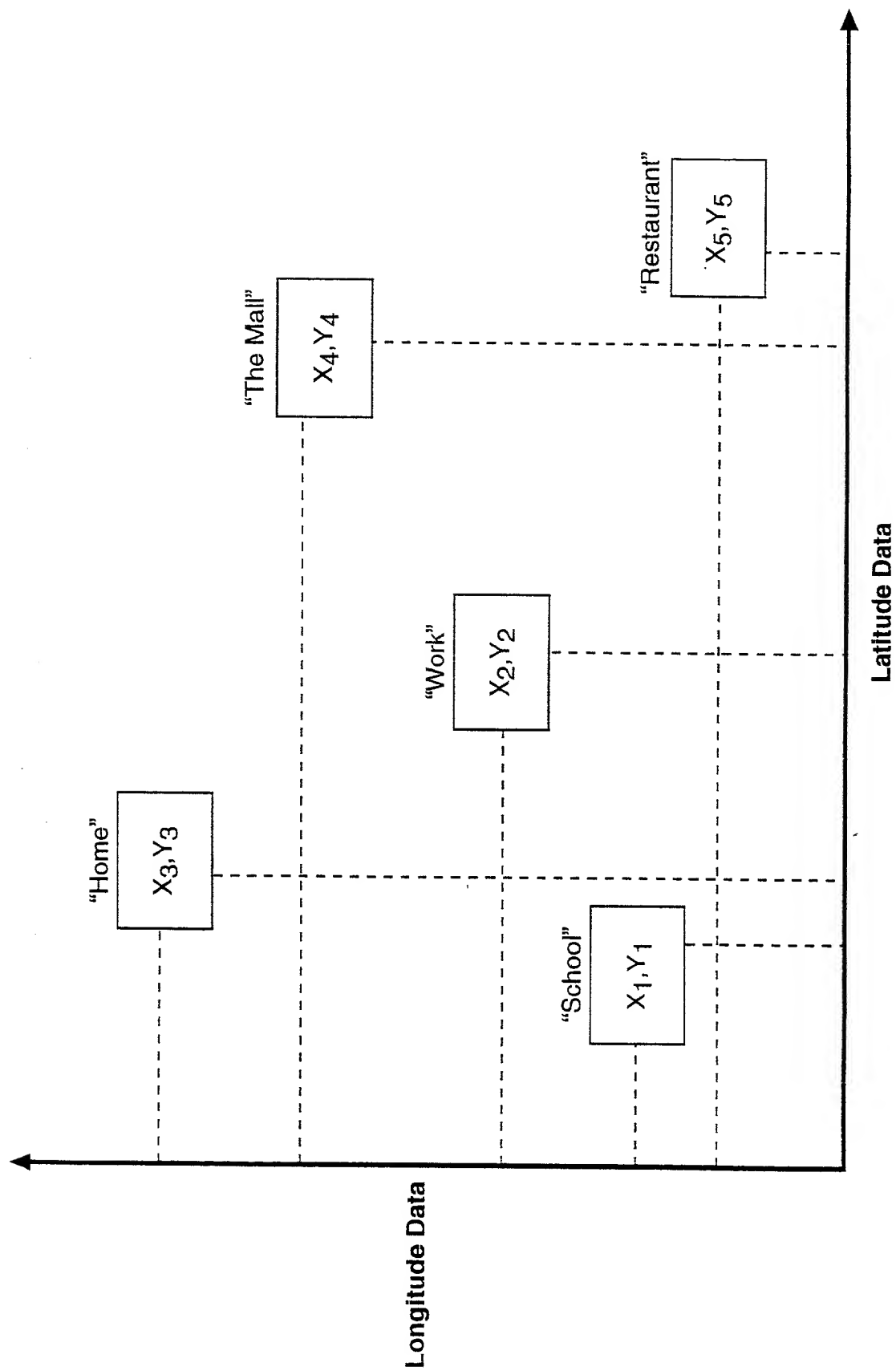


Figure 1C

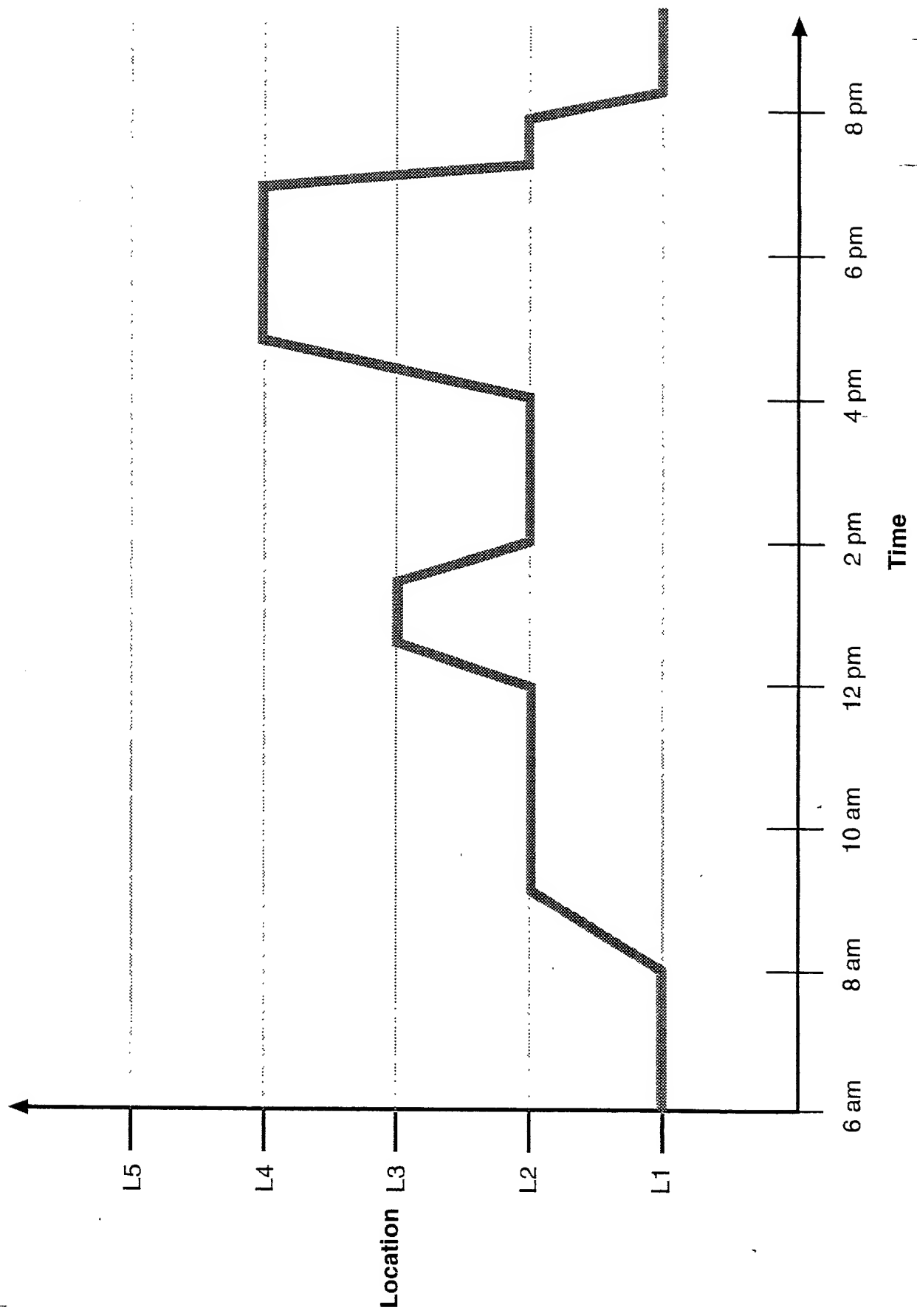


Figure 1D

151	Biographic Data	Data	Confidence	Correlation
163	Name	Sue	High	Yes
165	Gender	Female	High	Yes
167	Age	13	Medium	Yes
169	Ethnic Background	Chinese-American	Medium	No
153	Demographic Data			
171	Culture	American	Low	No
173	Region	East Coast	High	Yes
175	Likely Family Income	High	Low	No
155	Preferences Data			
177	Action Movies	High Interest	High	No
179	Hip-Hop Music	Low Interest	Low	No
181	Clothing from The GAP	High Interest	High	Yes

Figure 1E

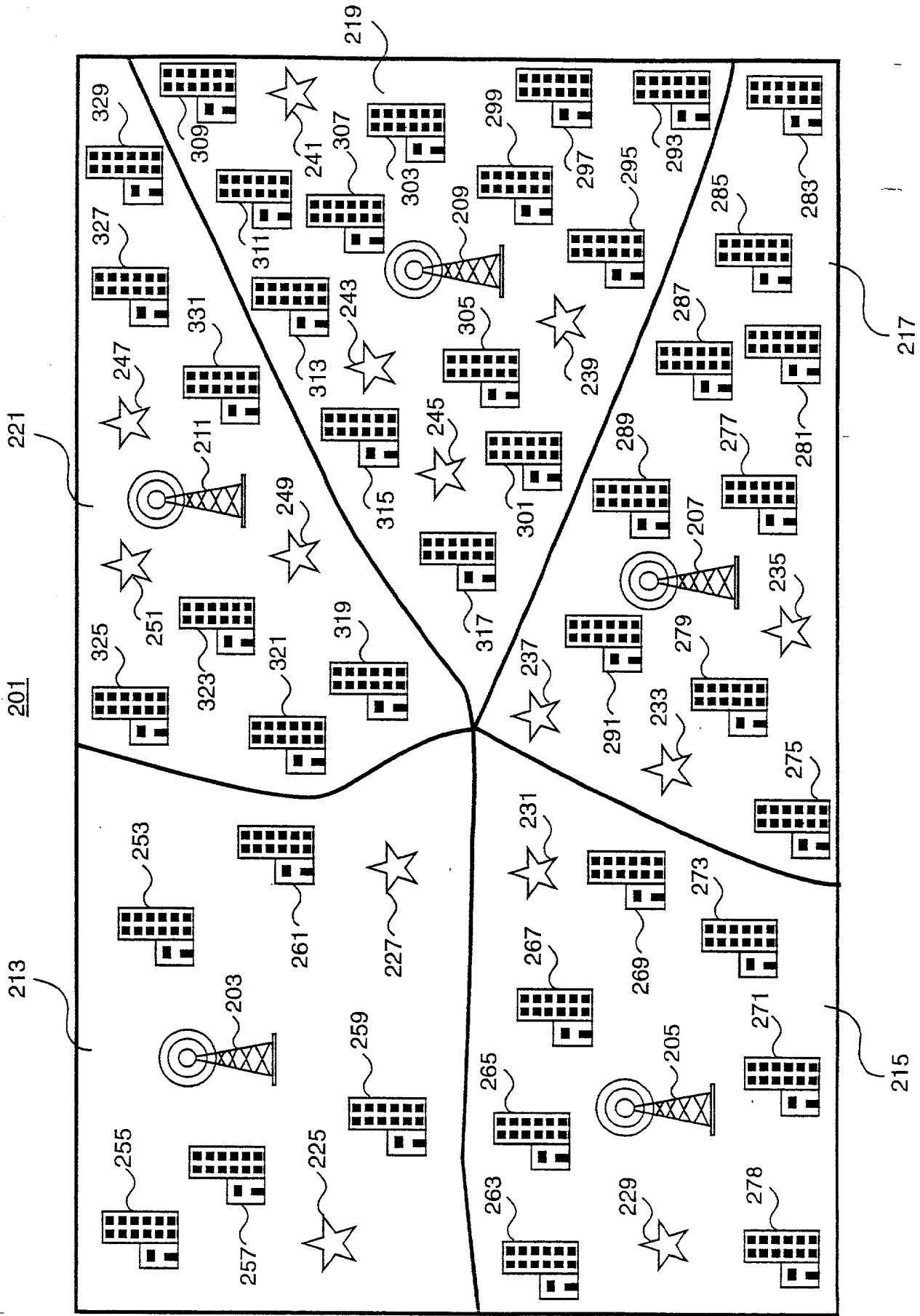


Figure 1F

101230" 23444660

Tower No.	Region	Adjoining Regions	Favorite Places	Network Affiliates
203	213	221	225 Riding Stables	253 Game Arcade
		215	227 Water Park	255 Video Store
				257 Taco Stand
				259 Book Store
				261 Riding Supply Store

Figure 1G (1 of 5)

Tower No.	Region	Adjoining Regions	Favorite Places	Network Affiliates
205	215	213	229 Aunt Jane's House	263 24-Hour Gym
		217	231 Linear Park	265 Ice Skating Rink
		221	233 Pottery Supply Store	267 Sporting Goods Superstore
				269 Promdress Shop
				271 Belgian Chocolate Store
				273 Pet Store
				278 Model Train Store

09944422 083104

Tower No.	Region	Adjoining Regions	Favorite Places	Network Affiliates
207	217	219	235 Candy's House	275 Corn Maze
		221	237 Resale Boutique	277 Aquarium
		215		279 Museum
				281 I-MAX Theatre
				283 Movie Theatre
				285 Laser Tag Facility
				287 Pizza Place
				289 Zoo
				291 Public Library

Figure 1G (3 of 5)

101E80" 2844660

Tower No.	Region	Adjoining Regions	Favorite Places	Network Affiliates
209	219	217	239 Home	293 Mall #1
		221	241 School	295 Mall #2
			243 Work	297 Chinese Food
			245 Suzy's House	299 K-Mart
				301 Target
				303 Record Store
				305 Batting Cages
				307 Golf Driving Range
				309 Computer Superstore
				311 Boy's Club
				313 Church #1
				315 Restaurant #14
				317 Bicycle Shop

Figure 1G (4 of 5)

Tower No.	Region	Adjoining Regions	Favorite Places	Network Affiliates
211	221	219	247 Uncle Clay's House	319 Metro Stop
		217	249 The Gap	321 Starbucks
		215	251 Grand Mother's House	323 Bowling Alley
		213		325 Antique Mall
				327 Tennis Facility
				329 Car Stereo Superstore

$$+$$

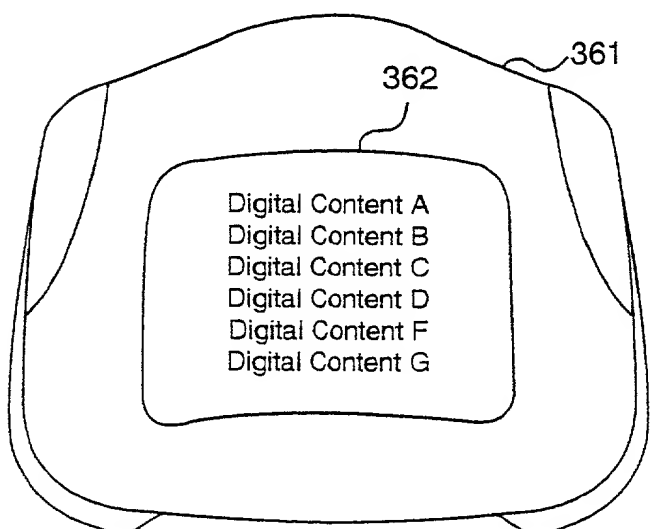
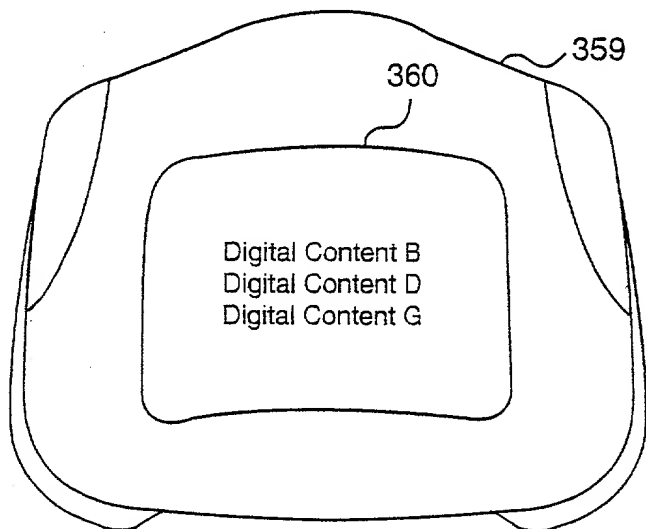
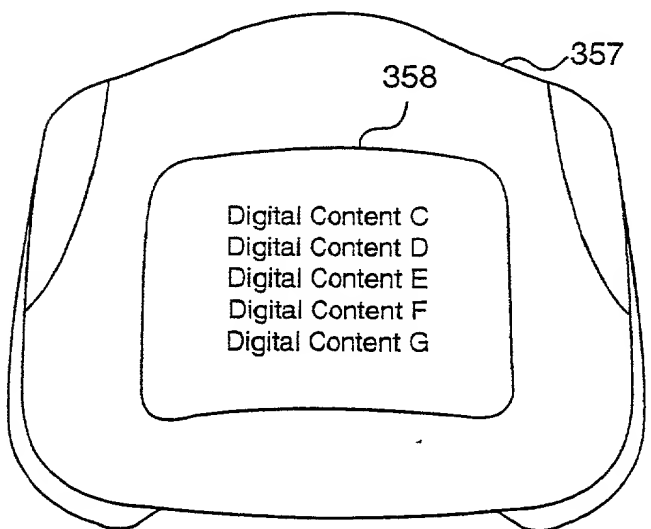
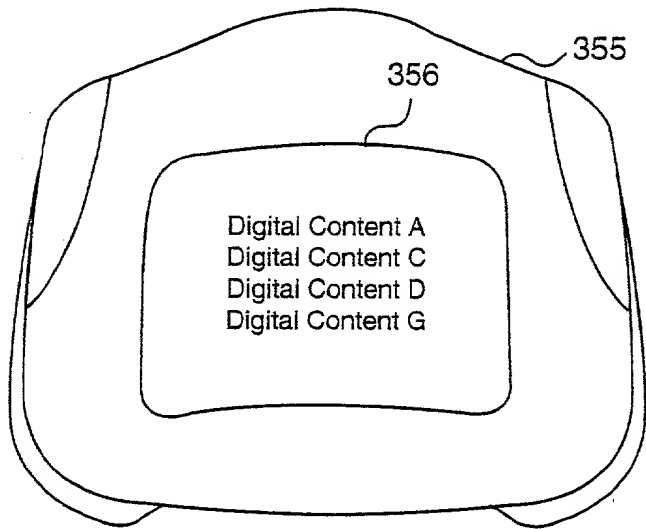
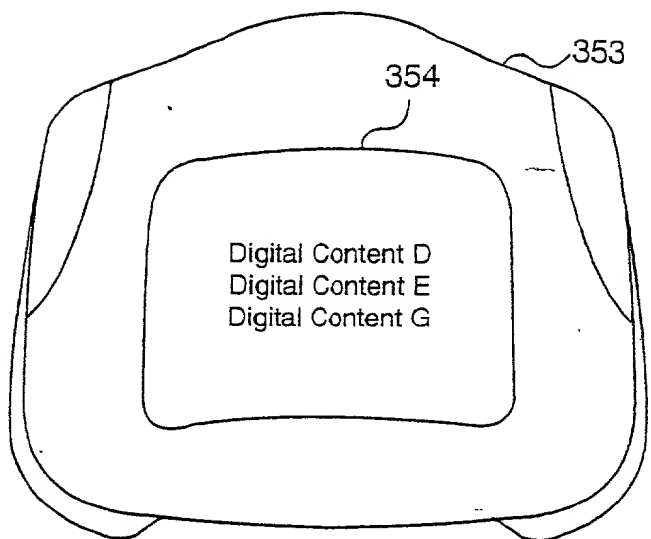
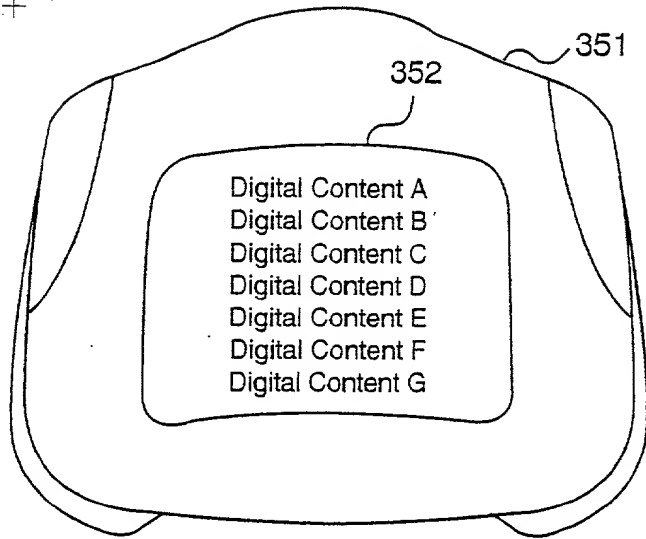


Figure 1H

365	366	367	369	371	373	375	377	379	381	383
Digital Content ID	Playable Digital Content	Source	Type	Subject	Energy Required to Play (Units)	Energy Earned for Playing (Units)	Preferred Location	Preferred Time	Period	
Digital Content A	Movie	Merchant #12	Advertisement	X, Y	0	5	LATLONG1	After School	Incrementally Larger with Location	
Digital Content B	Text and Alarm	Government Entity	Warning	Weather	0	0	Various Changing	Immediate	One Time Only	
Digital Content C	Graphical Icon	Friend #1	Email Message		2	0	N/A	ASAP	7 Days	
Digital Content D	Text Message	Acquaintance #3	Request for Chat		5	0	N/A	ASAP	3 Hours	
Digital Content E	Executable Spreadsheet	Merchant #2	Survey	L, M	0	20	LATLONG2	Between 12/1 and 12/25	25 Days	
Digital Content F	Text Message	School	Announcement	Sporting Event	1	0	N/A	Between 3:00 pm and 10:00 pm	Incrementally Larger for 7 Days	
Digital Content G	Calendar File	Soccer Team	Schedule		3	0	N/A		User Initiated for 2 Days	

Figure 11

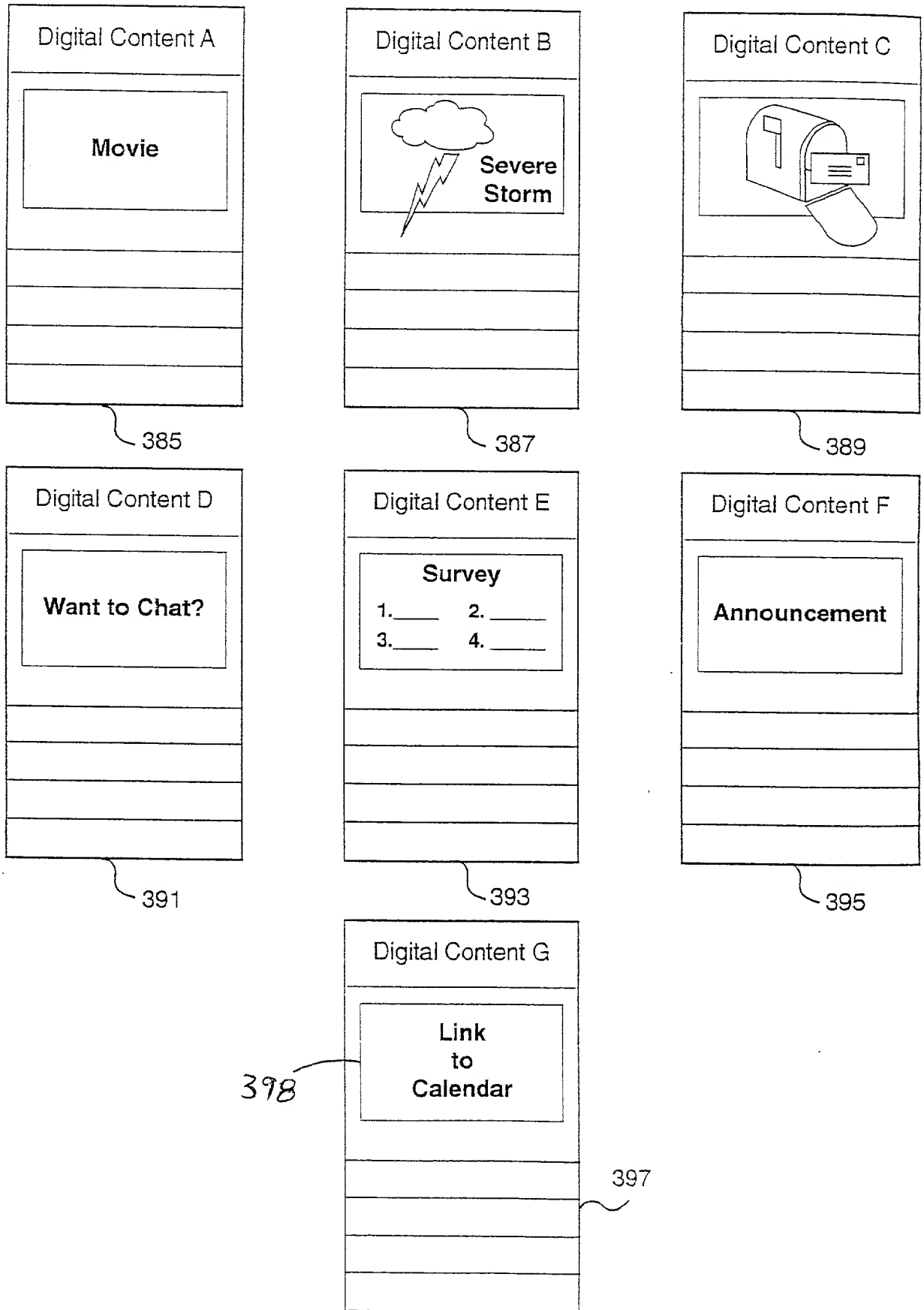


Figure 1J

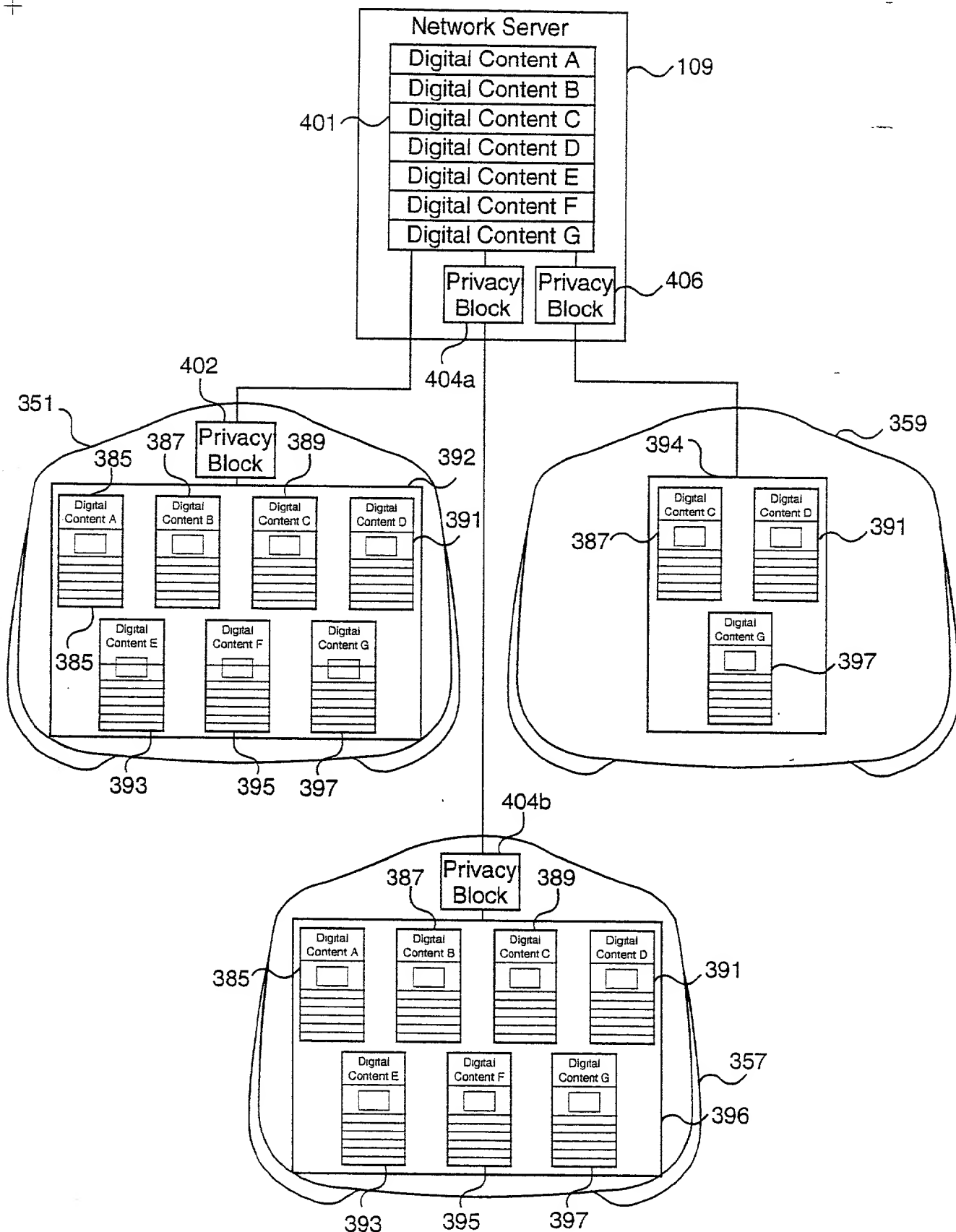


Figure 1K

407

Contextual User Profile												
	Static Components			Dynamic Data Components								
	423	423b	423c	425a	425b	425c	425d	425e	425f	425g	425h	
User/ Appliance	Biographic	Demographic	Cultural	Latitude Longitude	Time	Date	Available Energy	Food Pref.	Entertainment Preferences	Relationship Preferences	Privacy Block	
351	B1	DM3	C1	LATLONG1	4:00 pm	12/5	130	F1	E1	R3	P1	
353	B3	DM2	C2	LATLONG2	4:30 pm	12/5	43	F2	E3	R2	P2	
355	B2	DM1	C3	LATLONG3	5:00 pm	12/5	62	F3	E2	R1	P3	
357	B1	DM2	C1	LATLONG4	4:00 pm	12/5	227	F3	E1	R1	P4	
359	B3	DM3	C2	LATLONG5	4:30 pm	12/5	39	F2	E3	R2	P5	
361	B1	DM3	C3	LATLONG6	5:00 pm	12/5	200	F1	E2	R3	P6	

Figure 1L

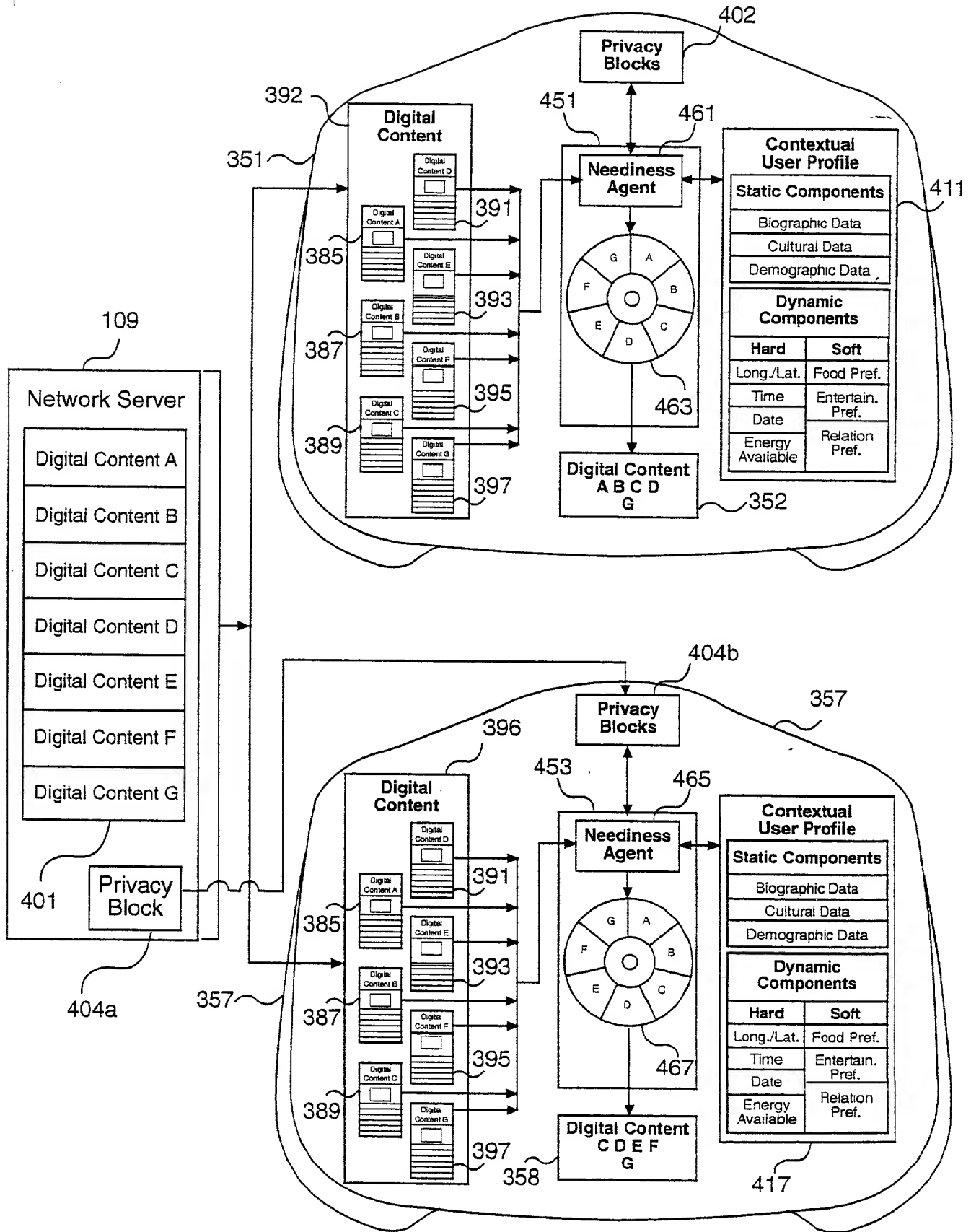


Figure 1M

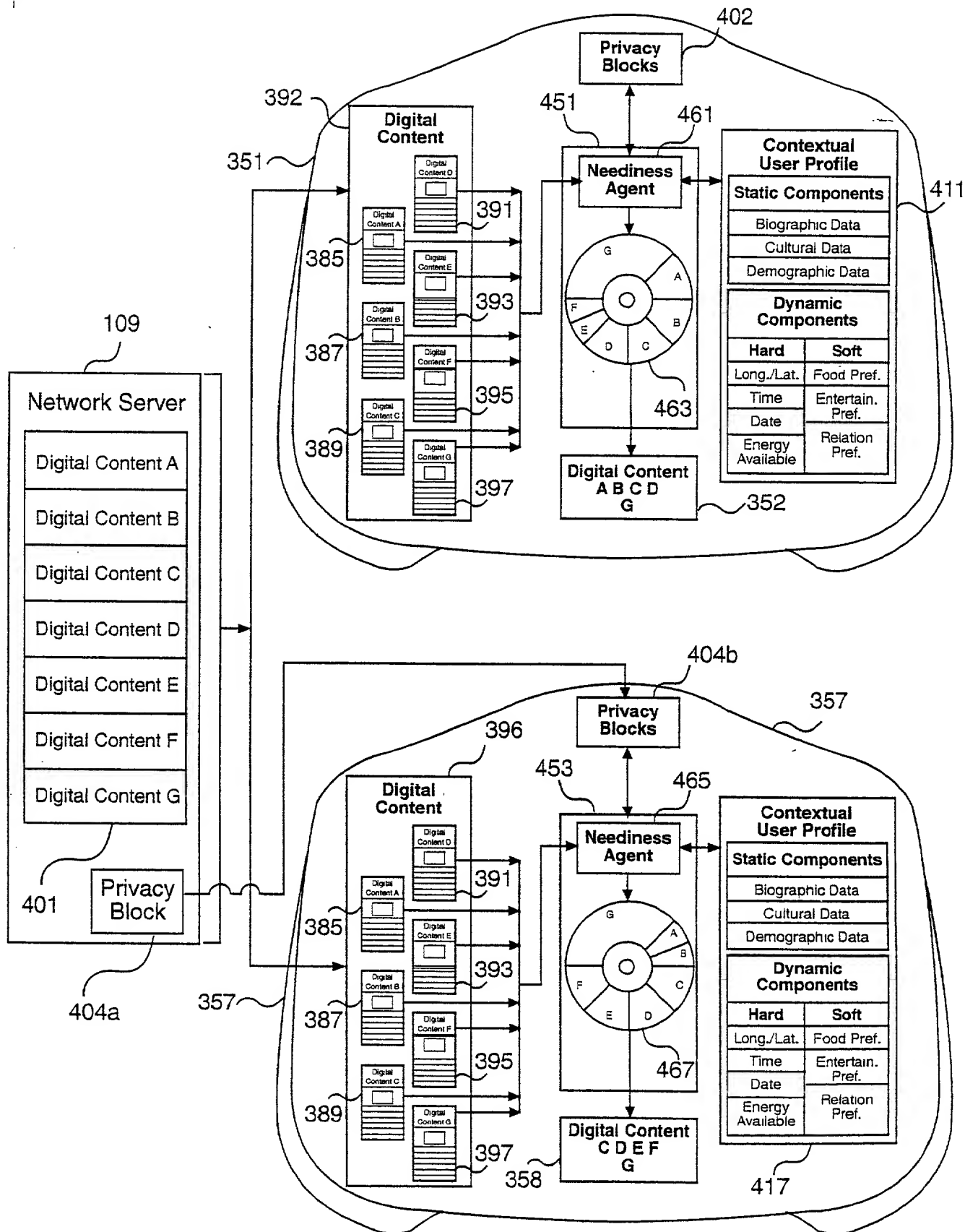


Figure 1N

Relationship Network as the content distribution mechanism

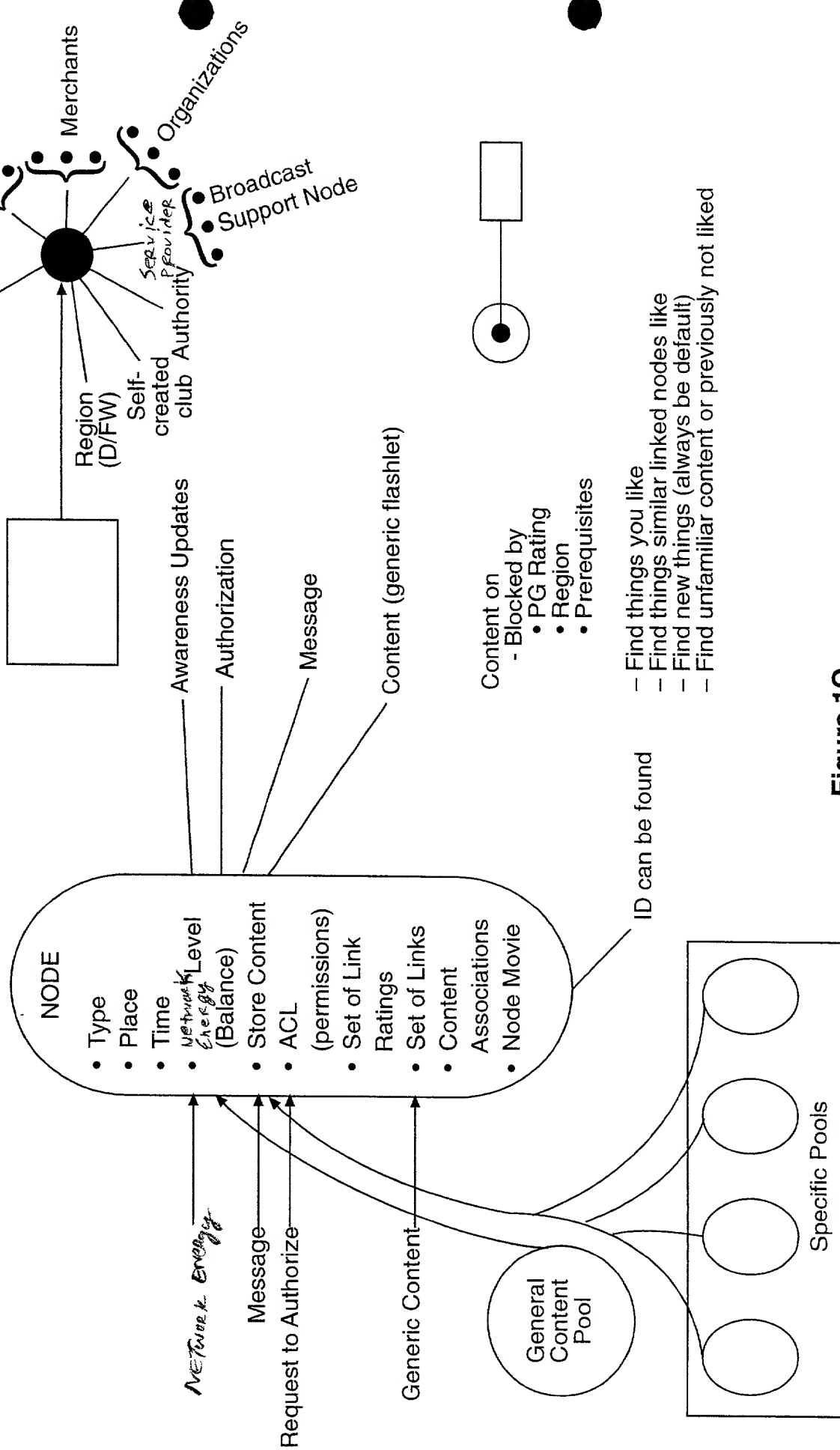


Figure 10

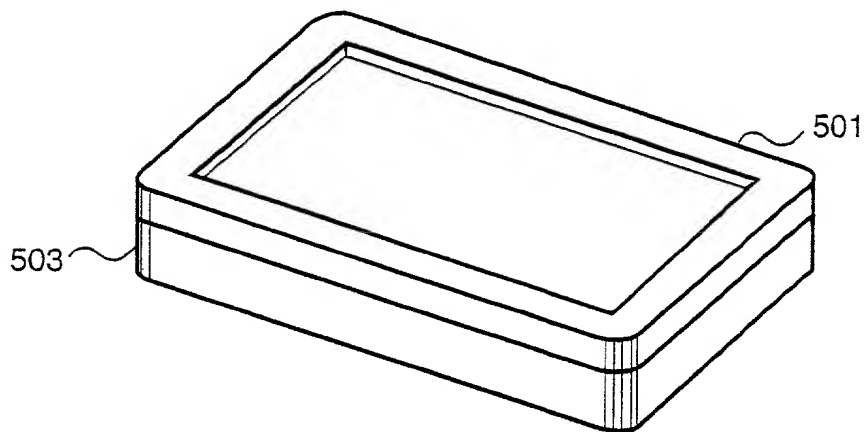


Figure 2A

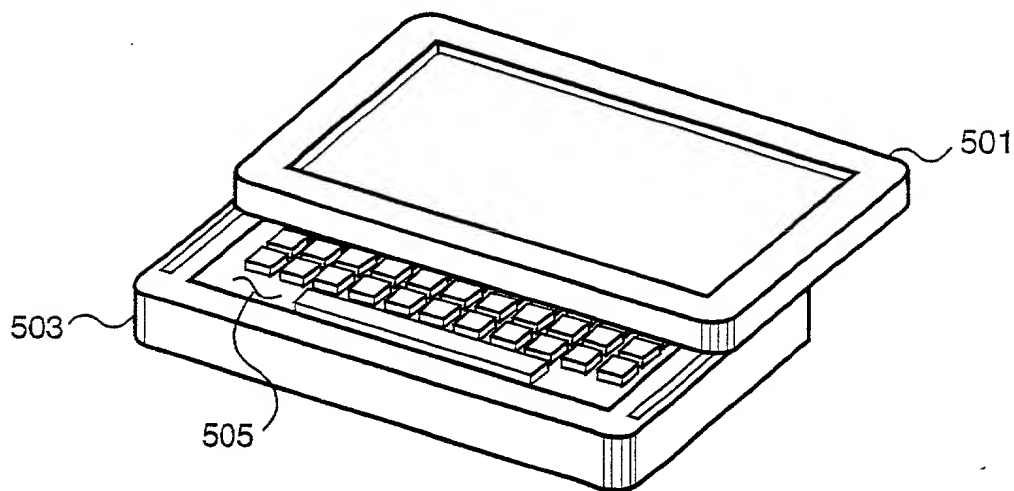


Figure 2B

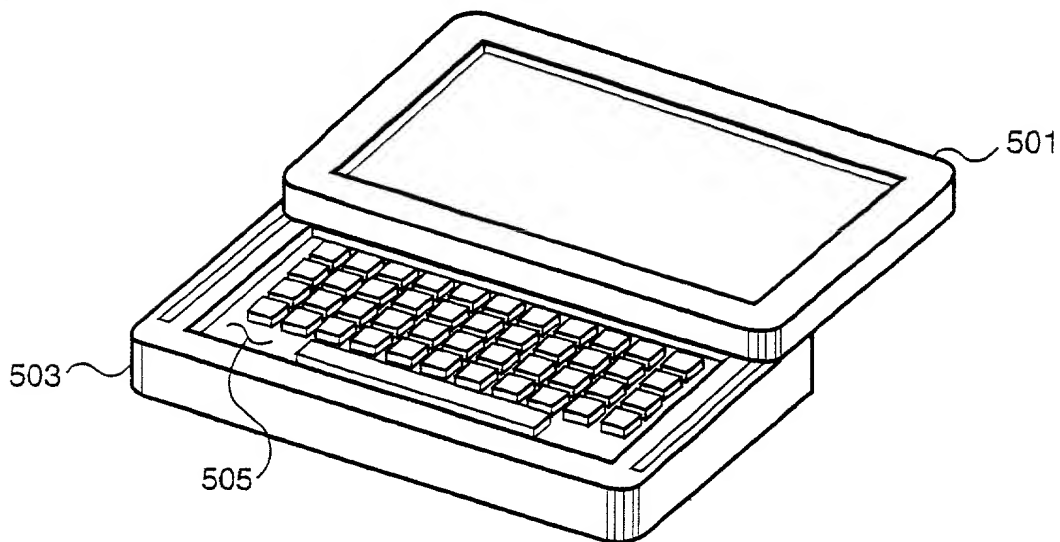


Figure 2C

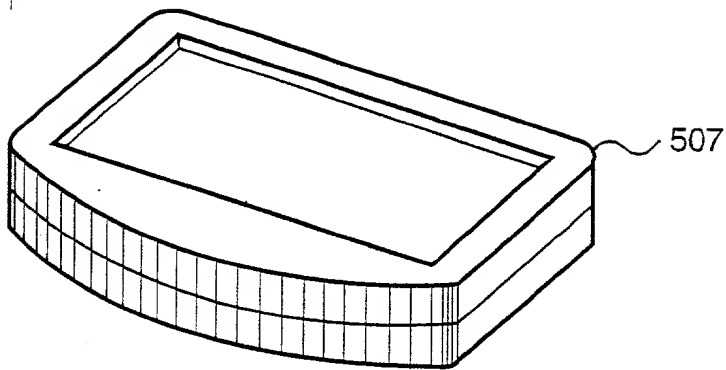


Figure 2D

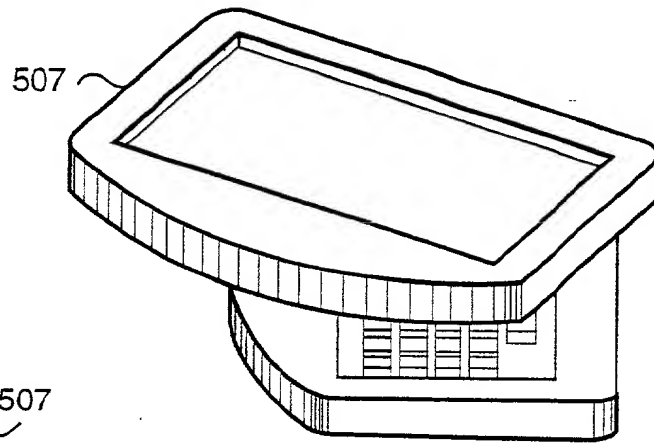


Figure 2E

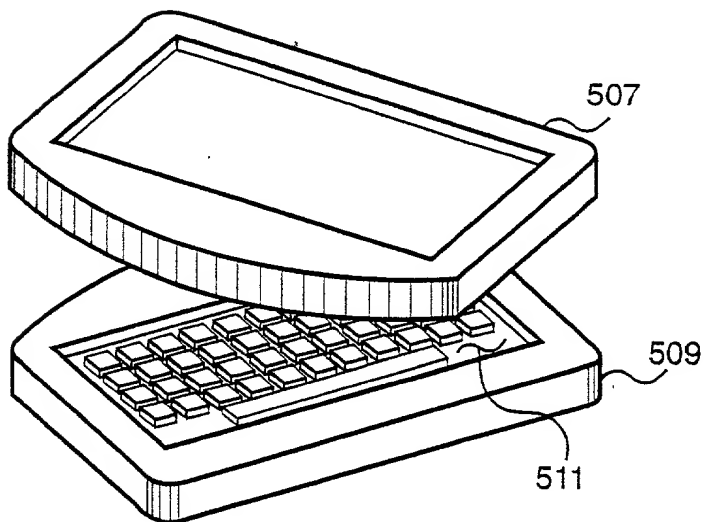


Figure 2F

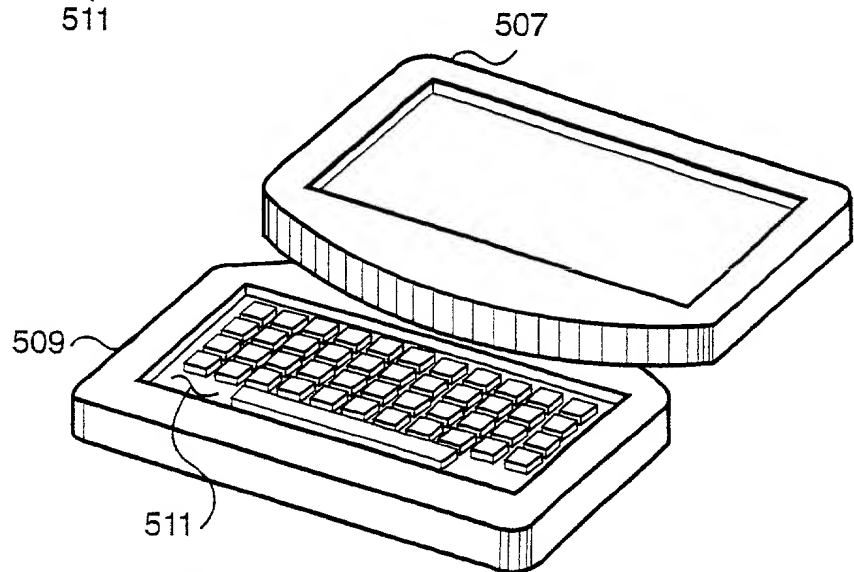


Figure 2G

FIG. 2D

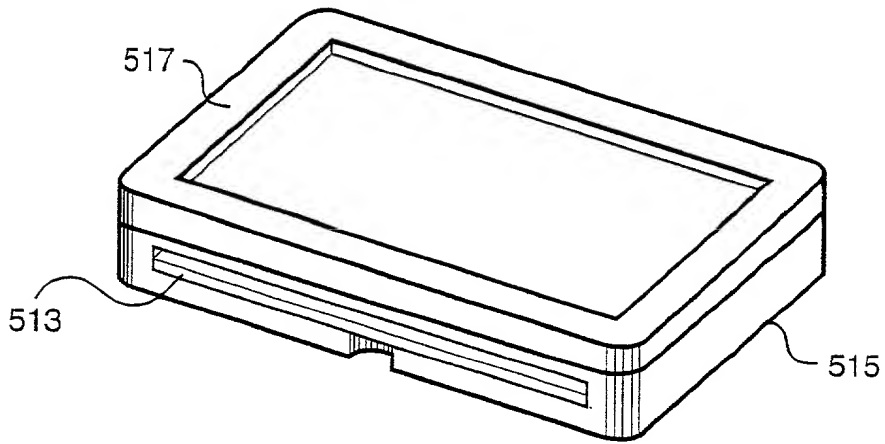


Figure 2H

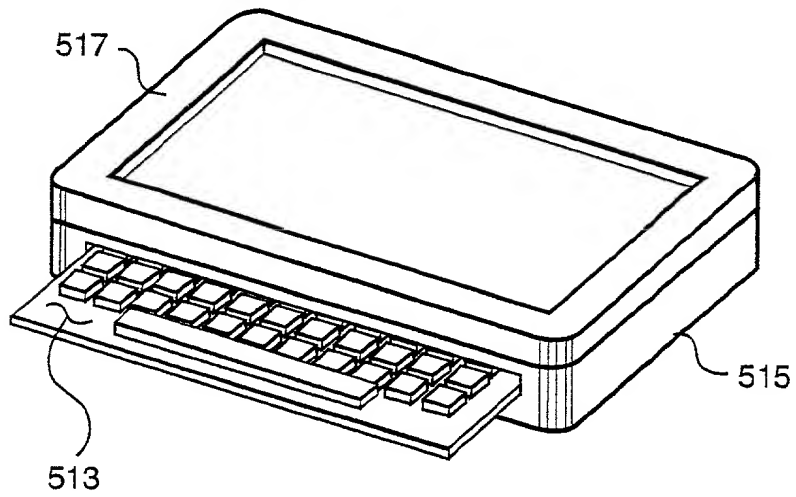


Figure 2I

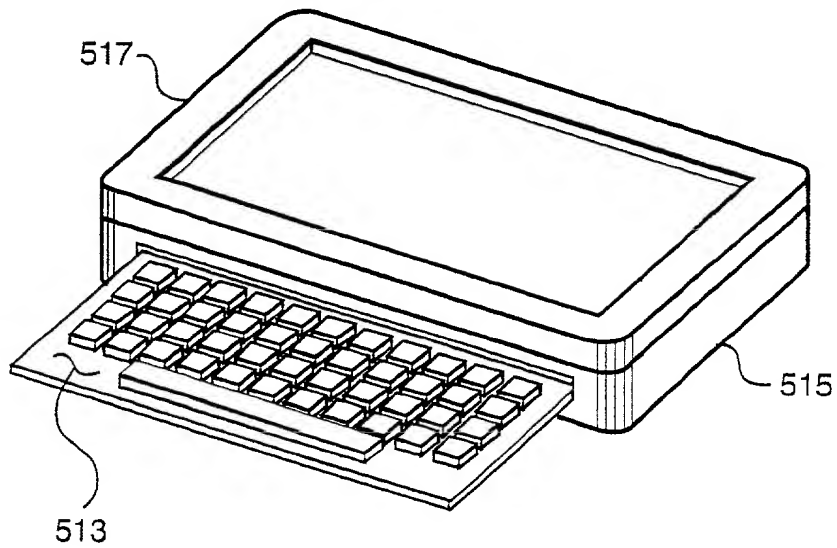


Figure 2J

0944492-03401

094443-083101

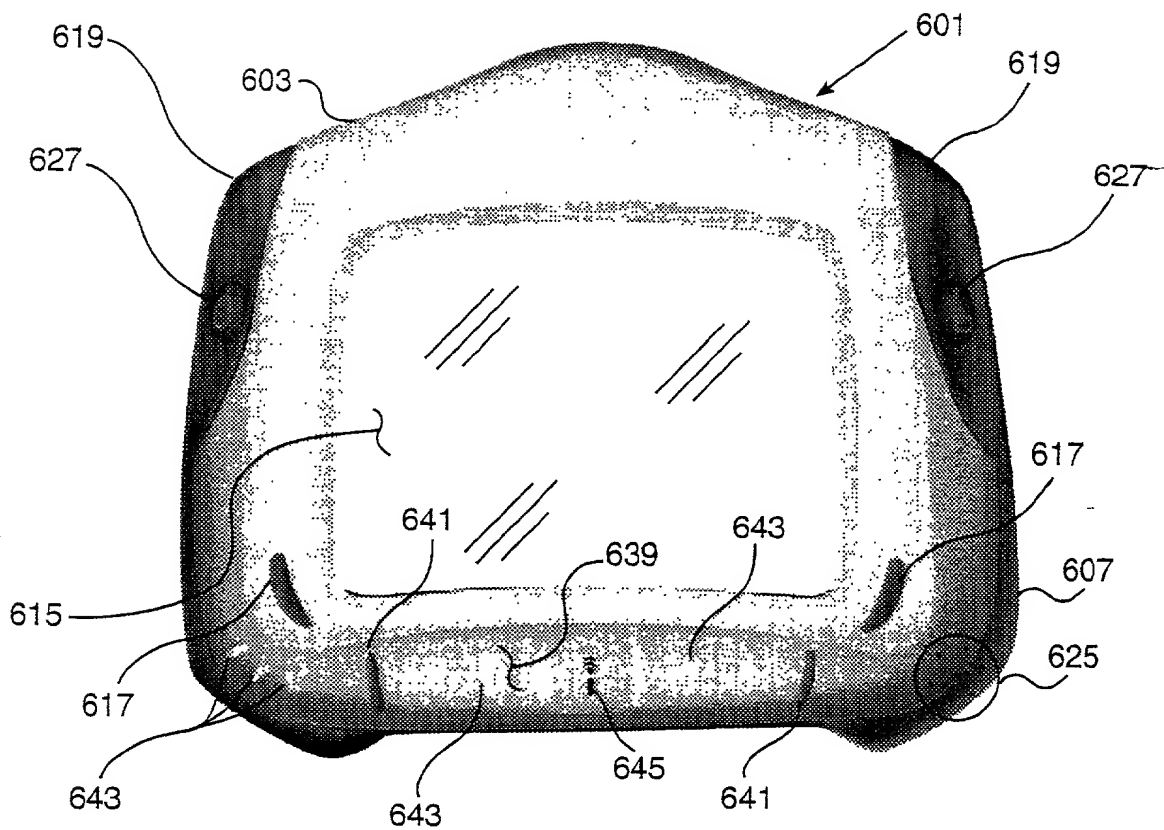


Figure 2K

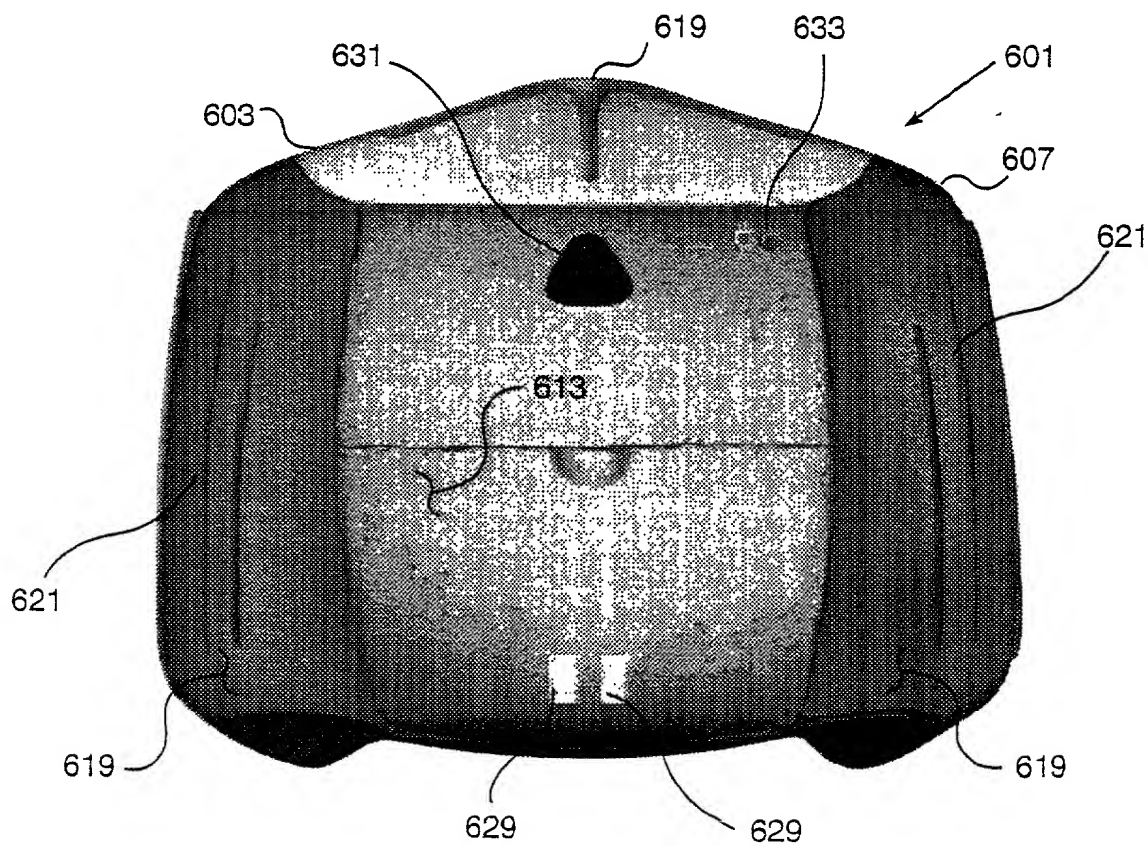


Figure 2L

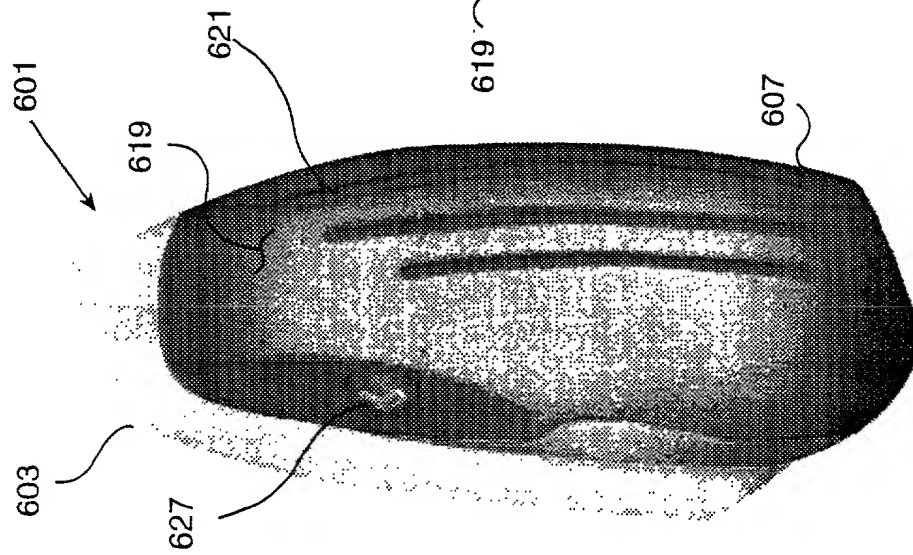


Figure 2M

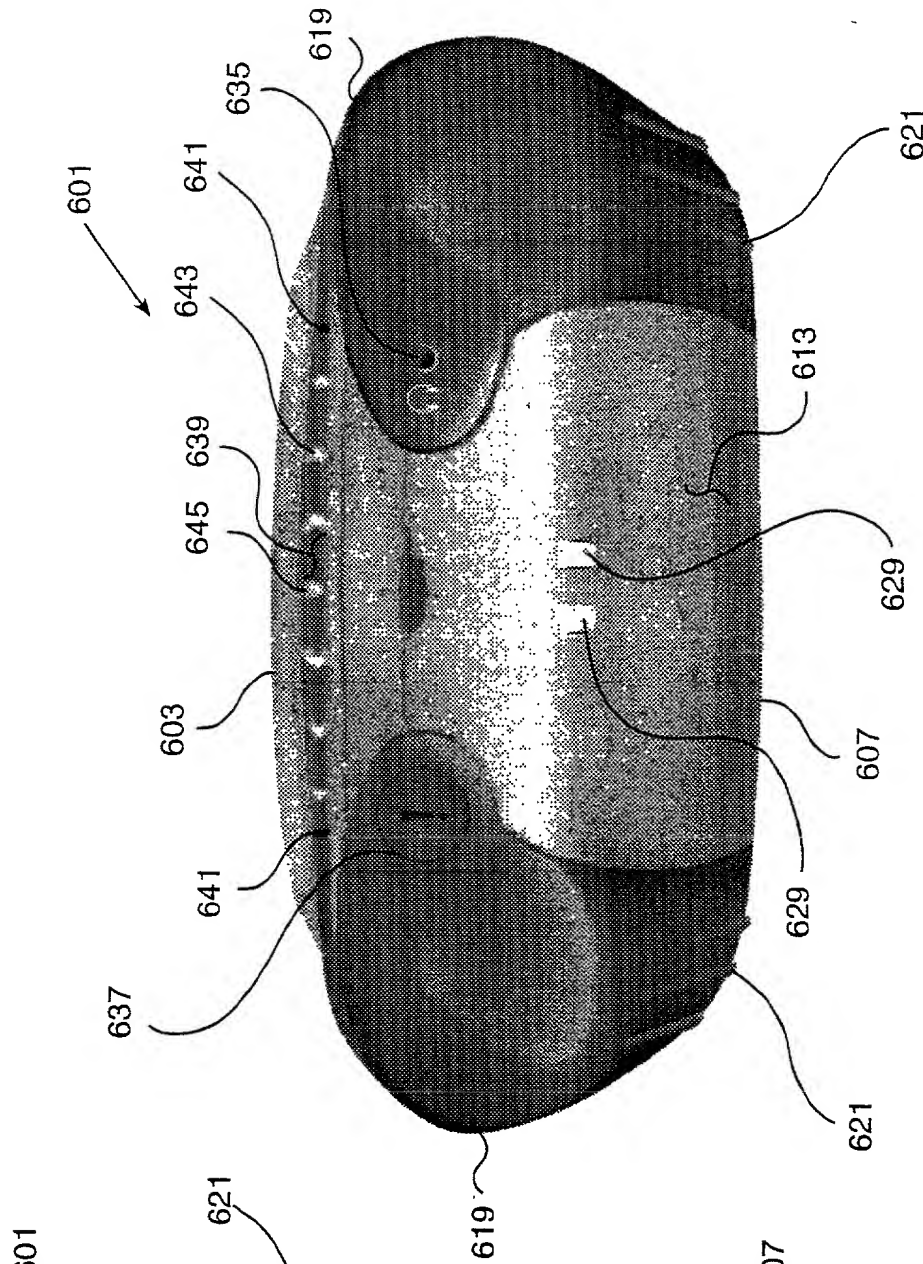


Figure 2N

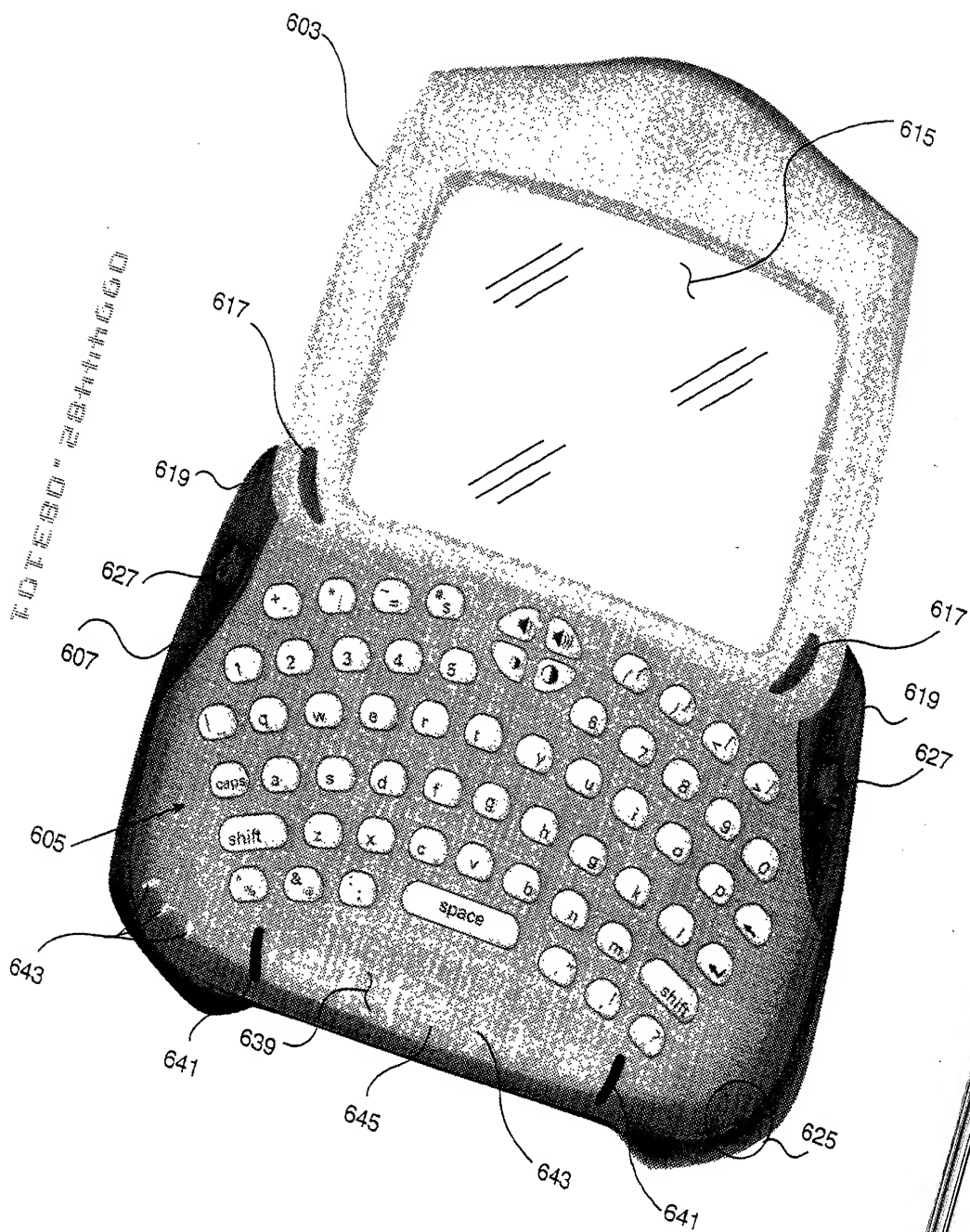


Figure 20

094448.08101 28444660

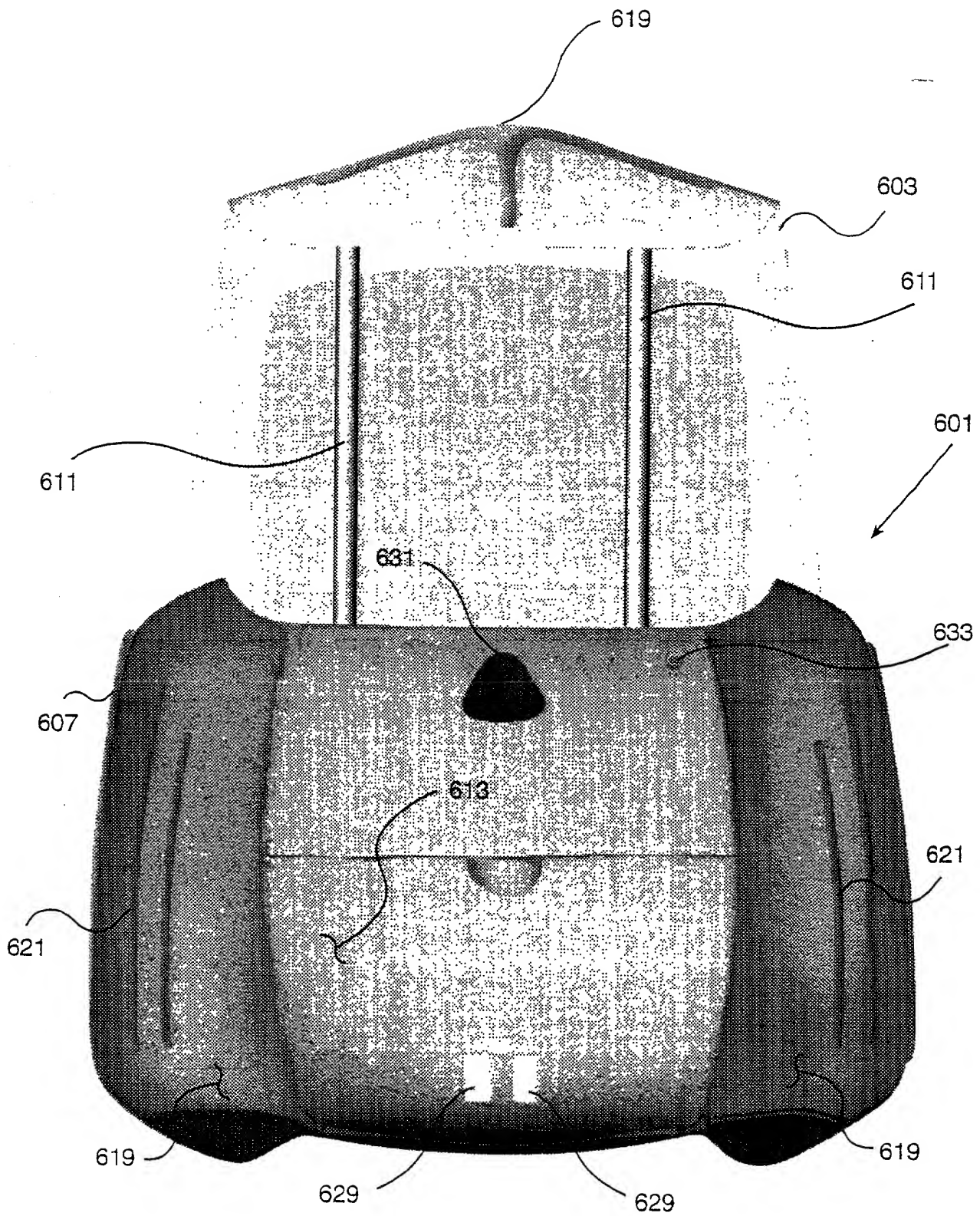


Figure 2P

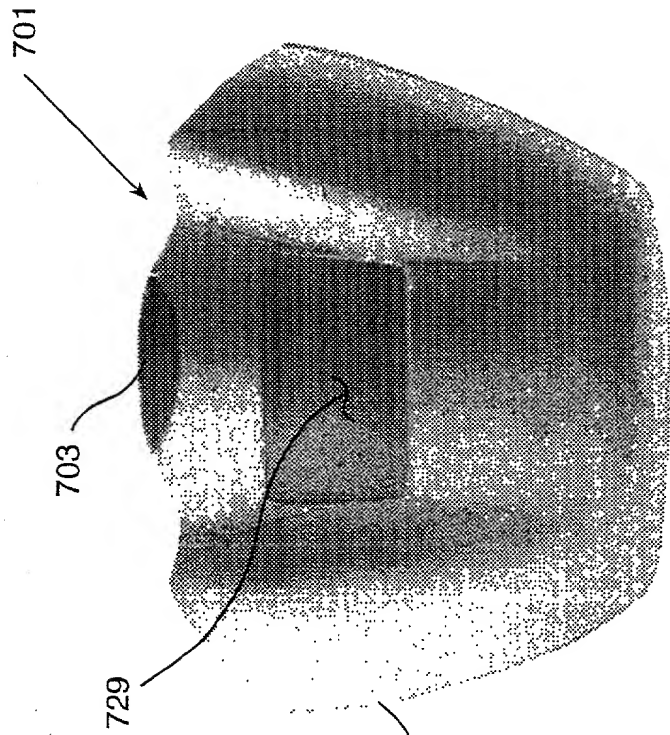


Figure 2Q

Figure 2R

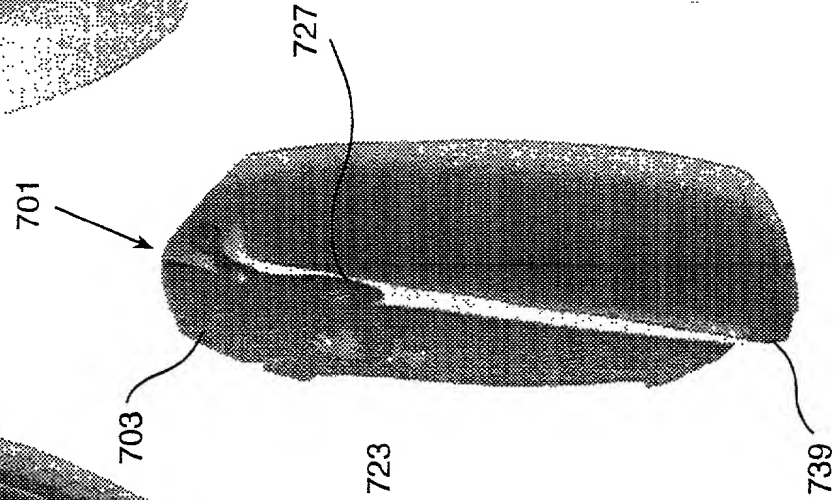


Figure 2S

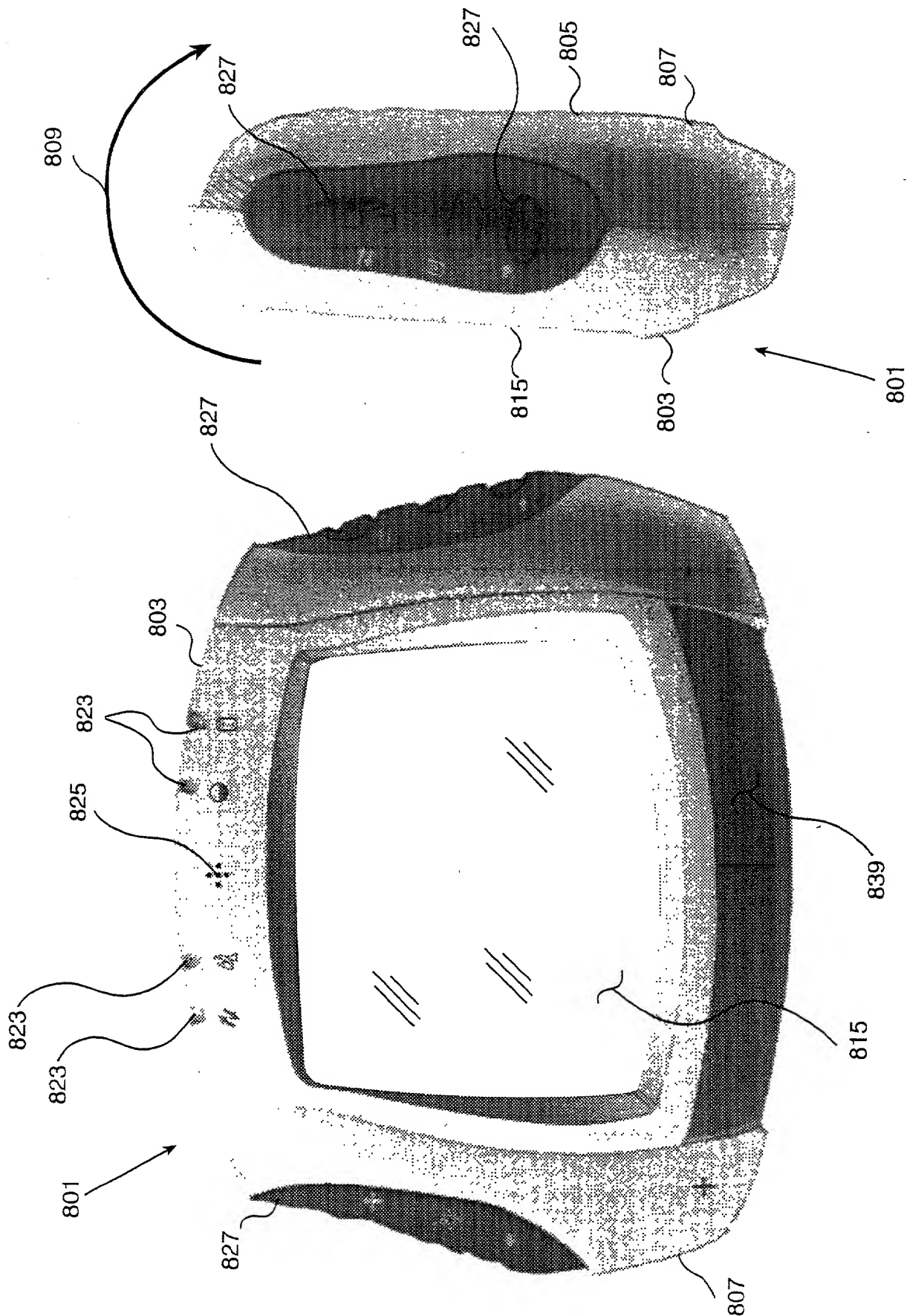


Figure 2T

Figure 2U

0944482-083101

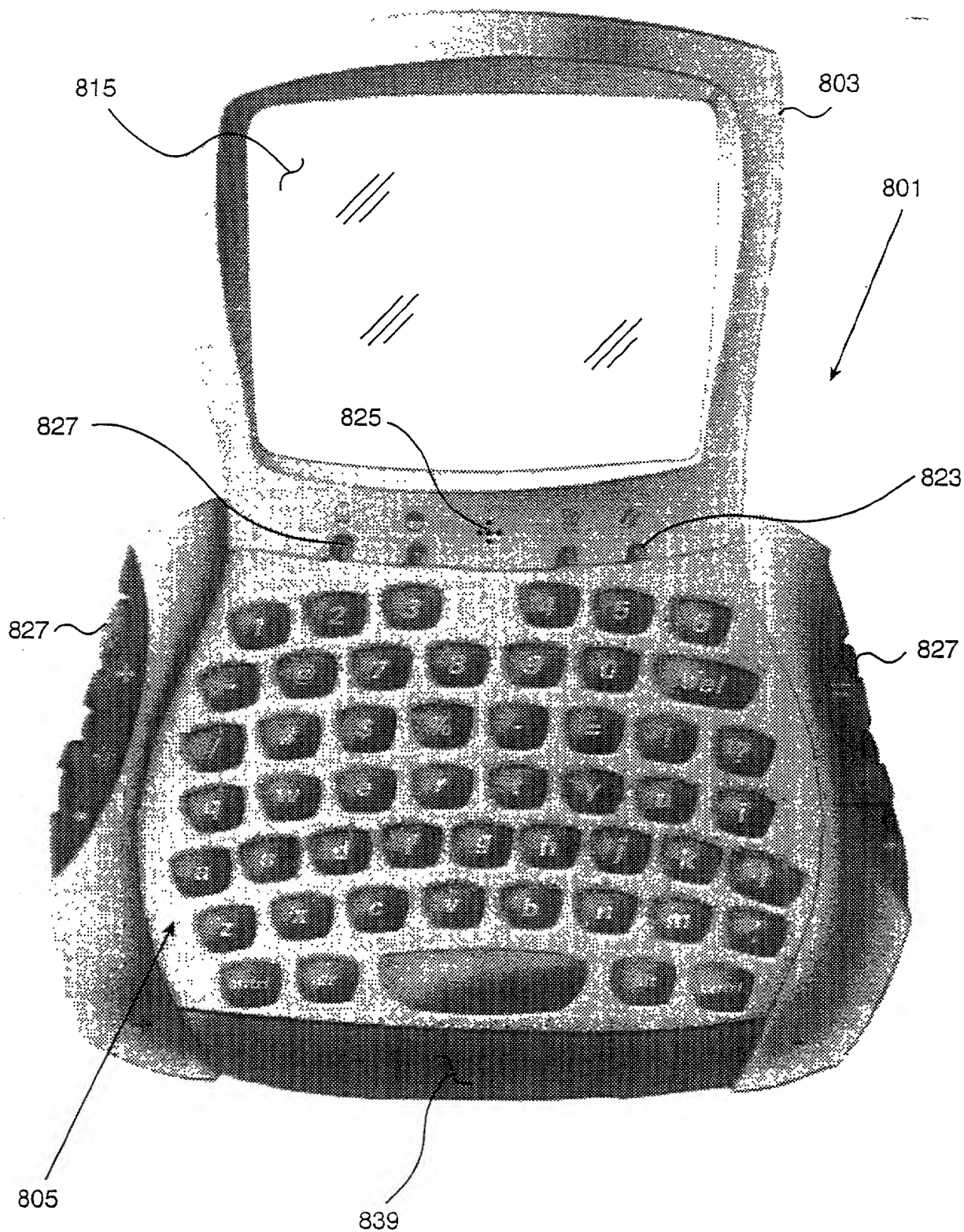


Figure 2V

0944482-033101

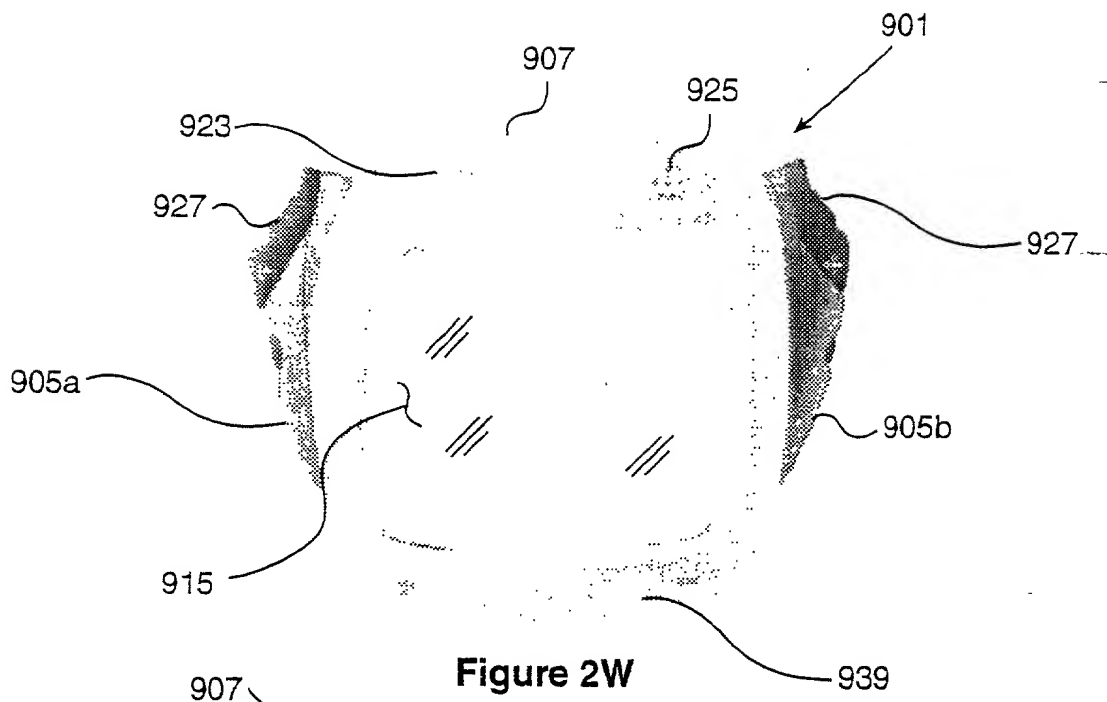


Figure 2W

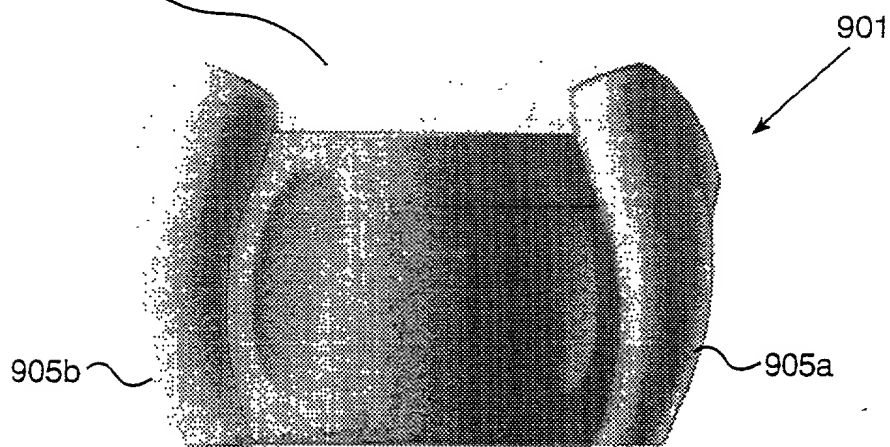


Figure 2X

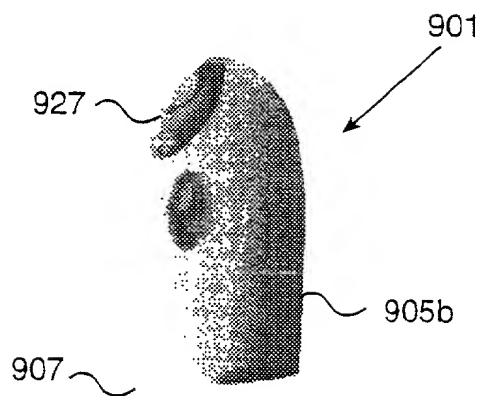


Figure 2Y

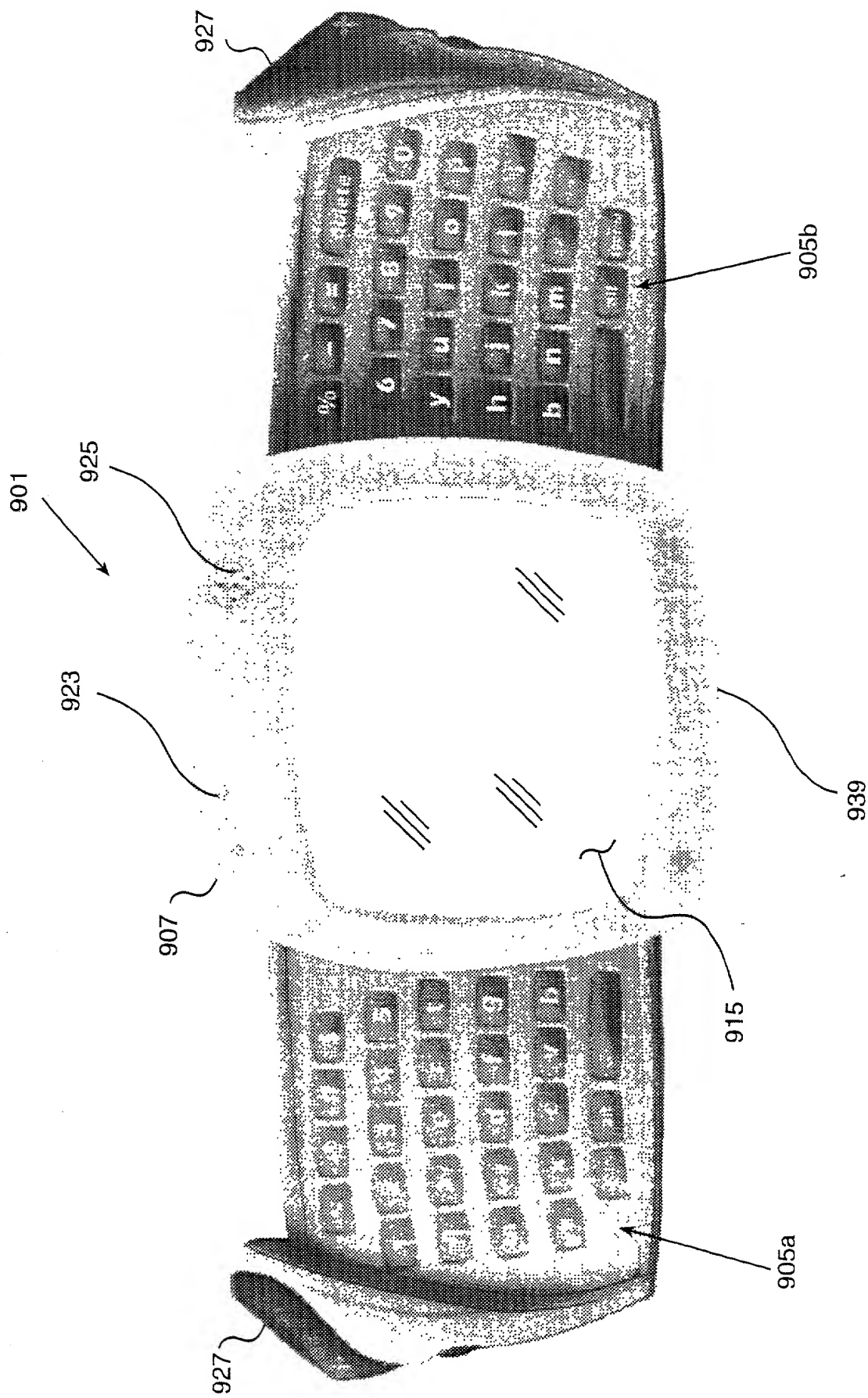


Figure 2Z

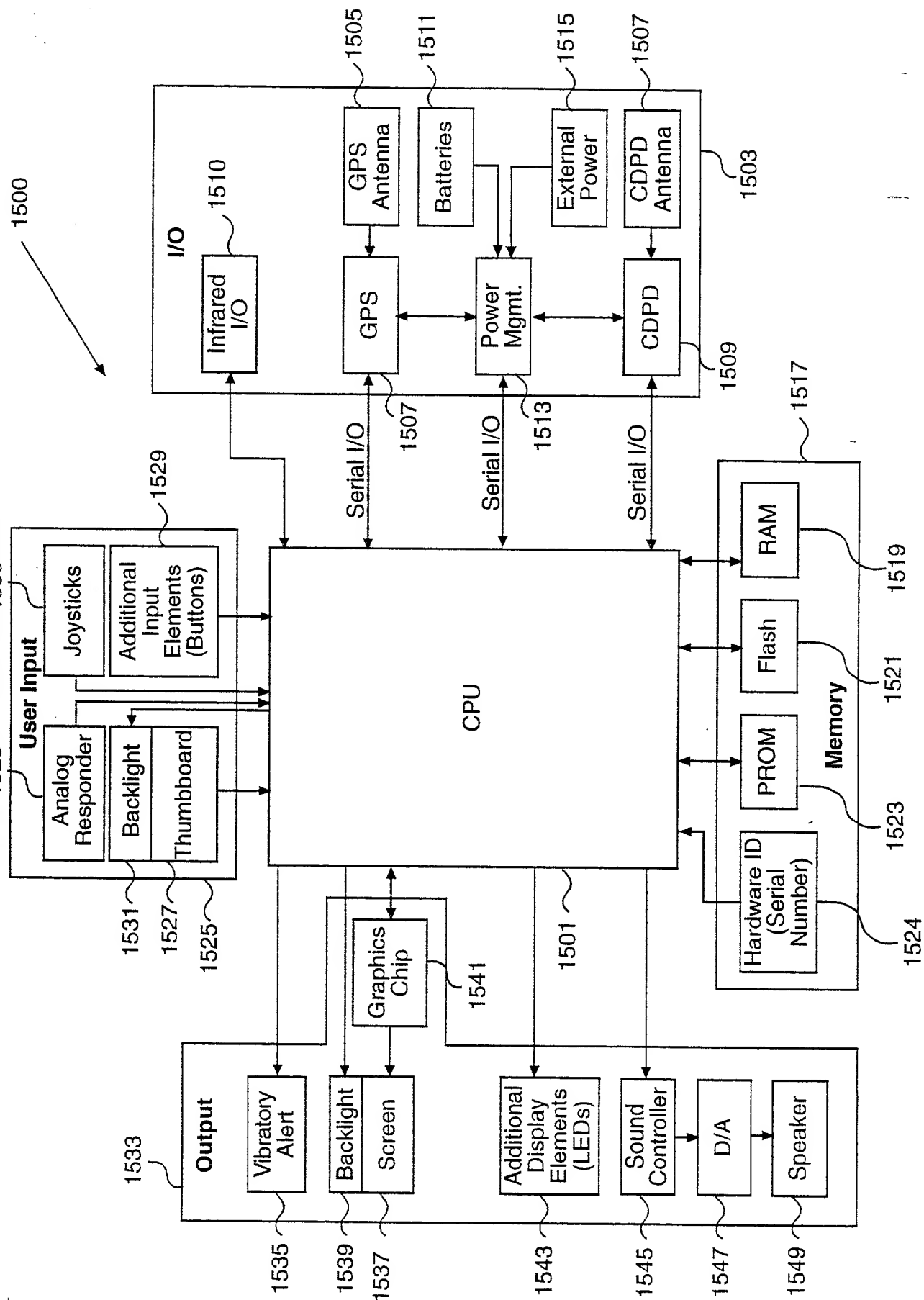


Figure 3A

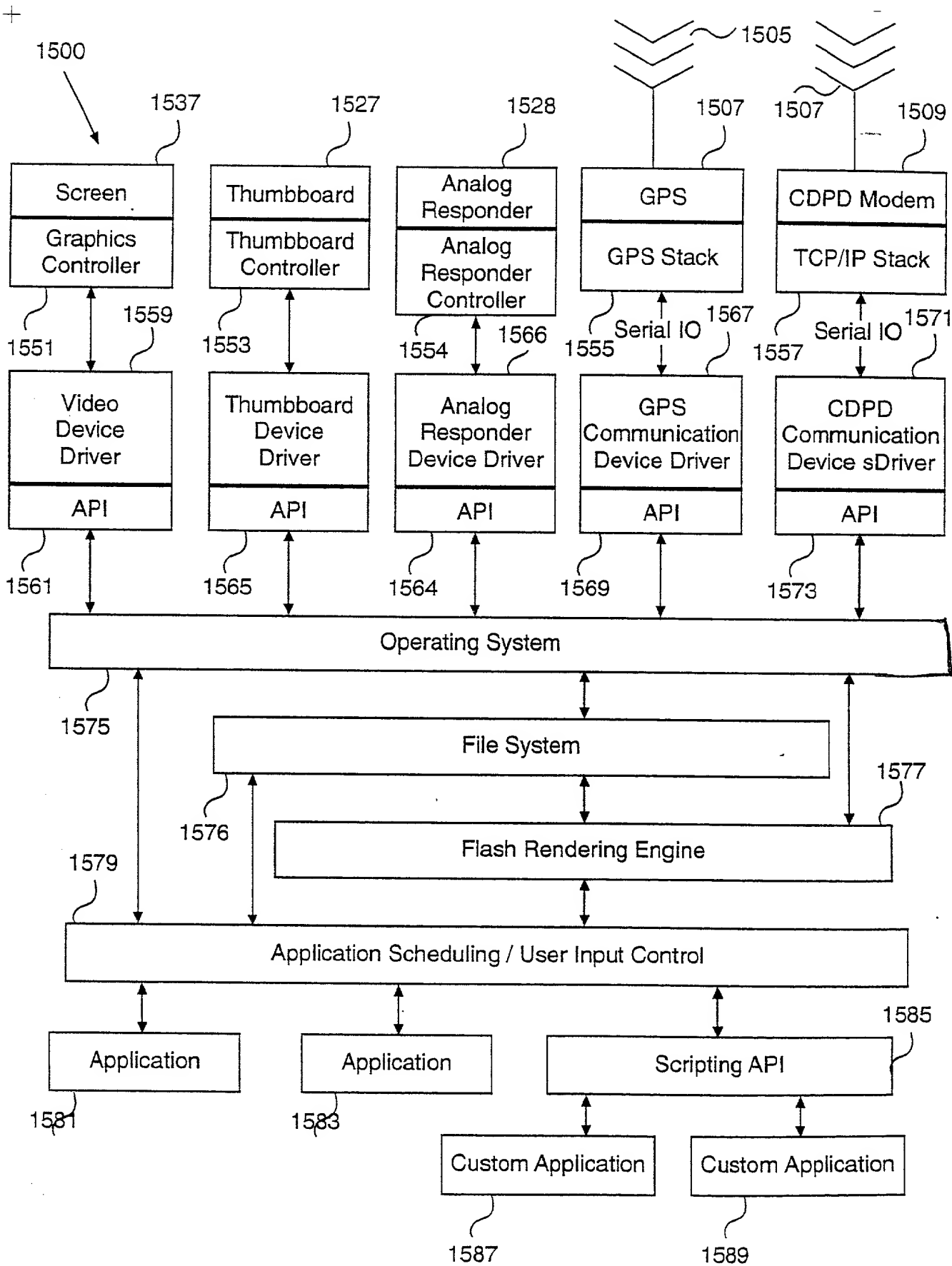


Figure 3B

2085

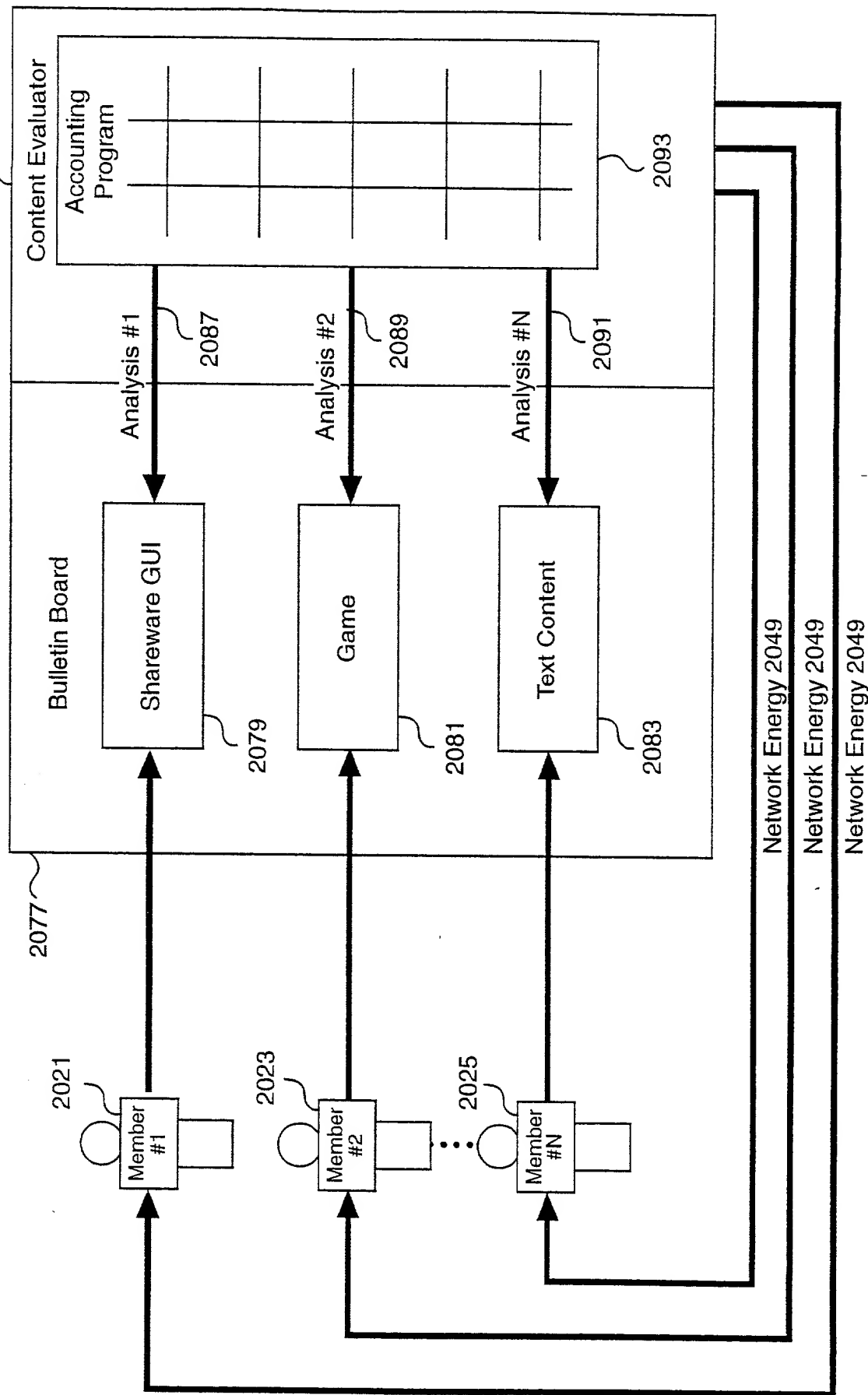


Figure 4B

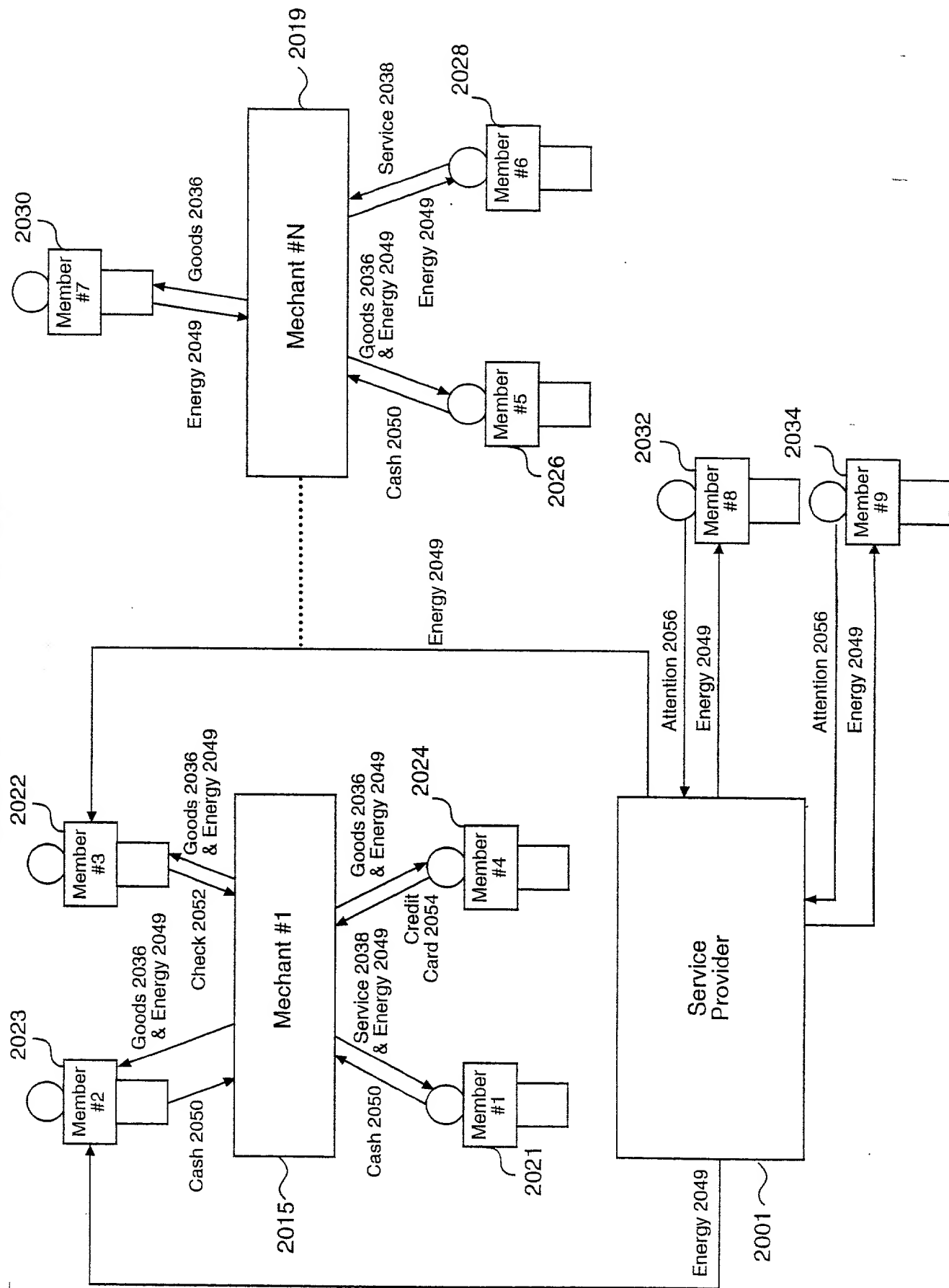


Figure 4C

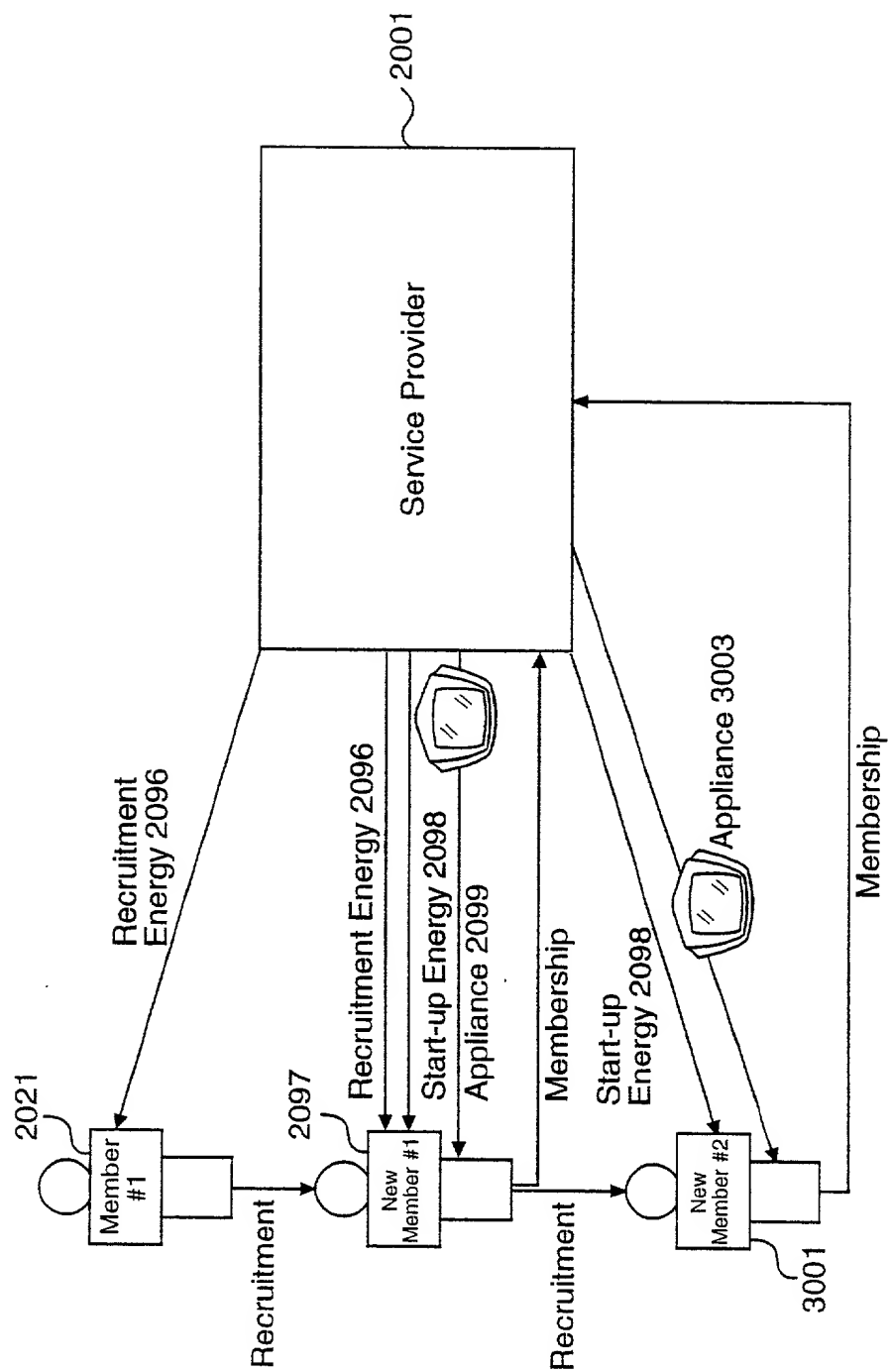


Figure 4D

Type of Input Element	Non-Biasing	Starting Position	Needs On-Screen Indicator	Continuous
One-Dimensional Touch Pad	Yes	No	No	Yes
Elongated Button	Yes	No	No	Yes
Touch Screen with Graphical Slider	Yes	No	Yes	Yes
Jog Wheel	No	Yes	Yes	Yes
Scroll Wheel	No	No	Yes	Yes
Thumb Wheel	No	No	Yes	Yes
Linear Sliding Knob	No	Yes	No	Yes
Touch Screen with Graphical Radio Buttons	Yes	No	Yes	No
Dedicated Buttons on Keyboard	Yes	No	No	No
Two-Dimensional Touch Pad	Yes	No	No	Yes

Figure 5A

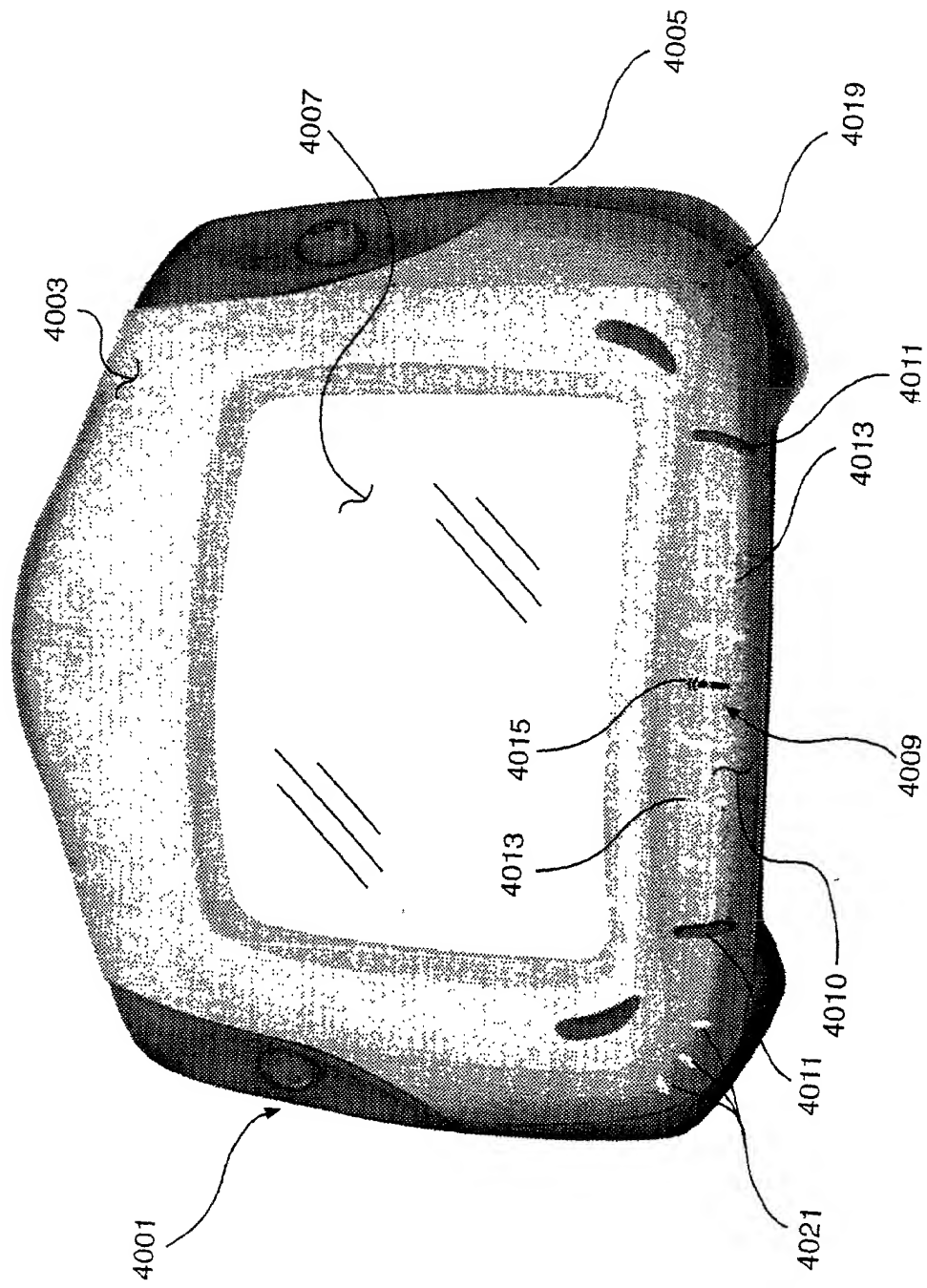


Figure 6A

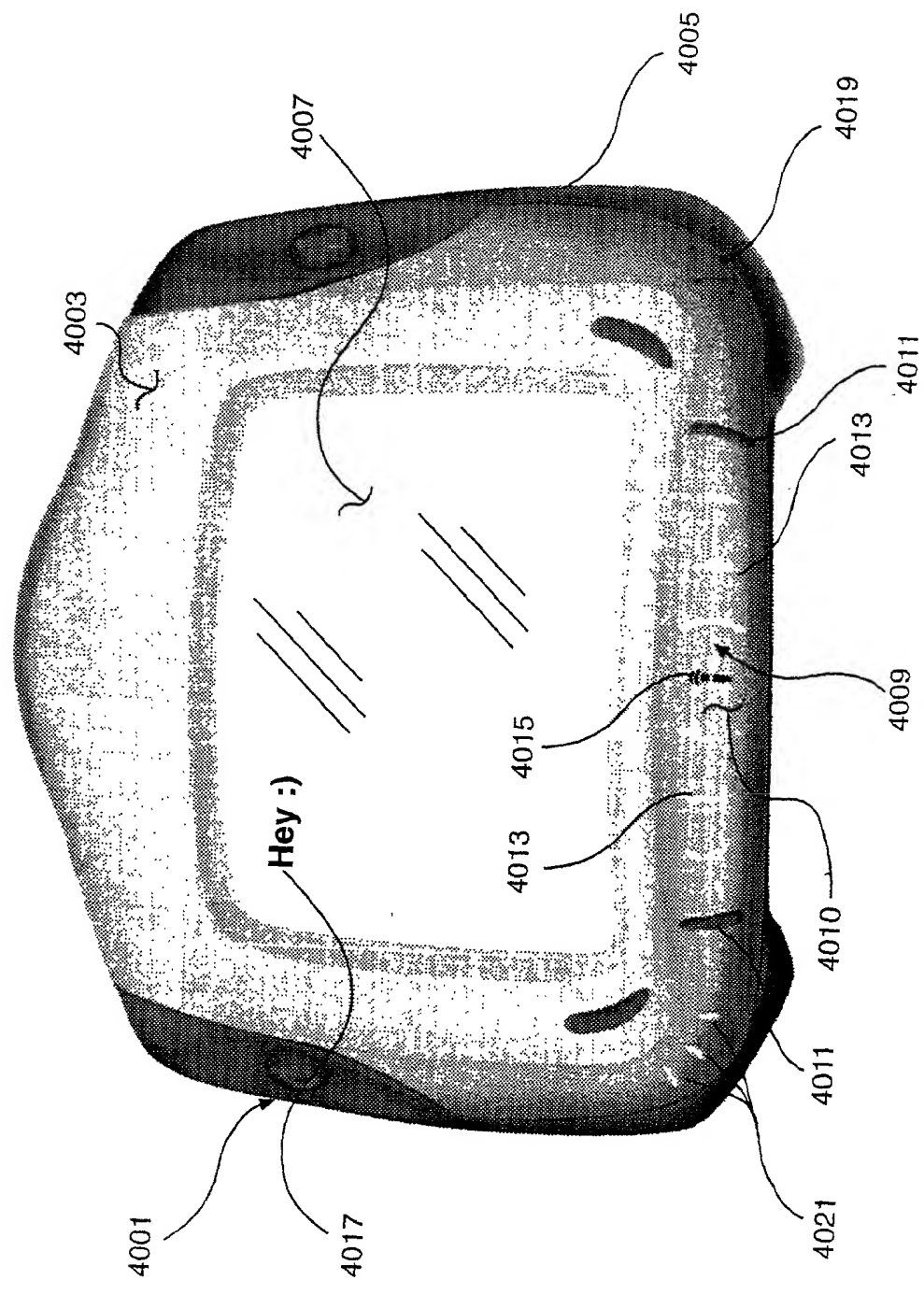


Figure 6B

TOFE80" 28444660

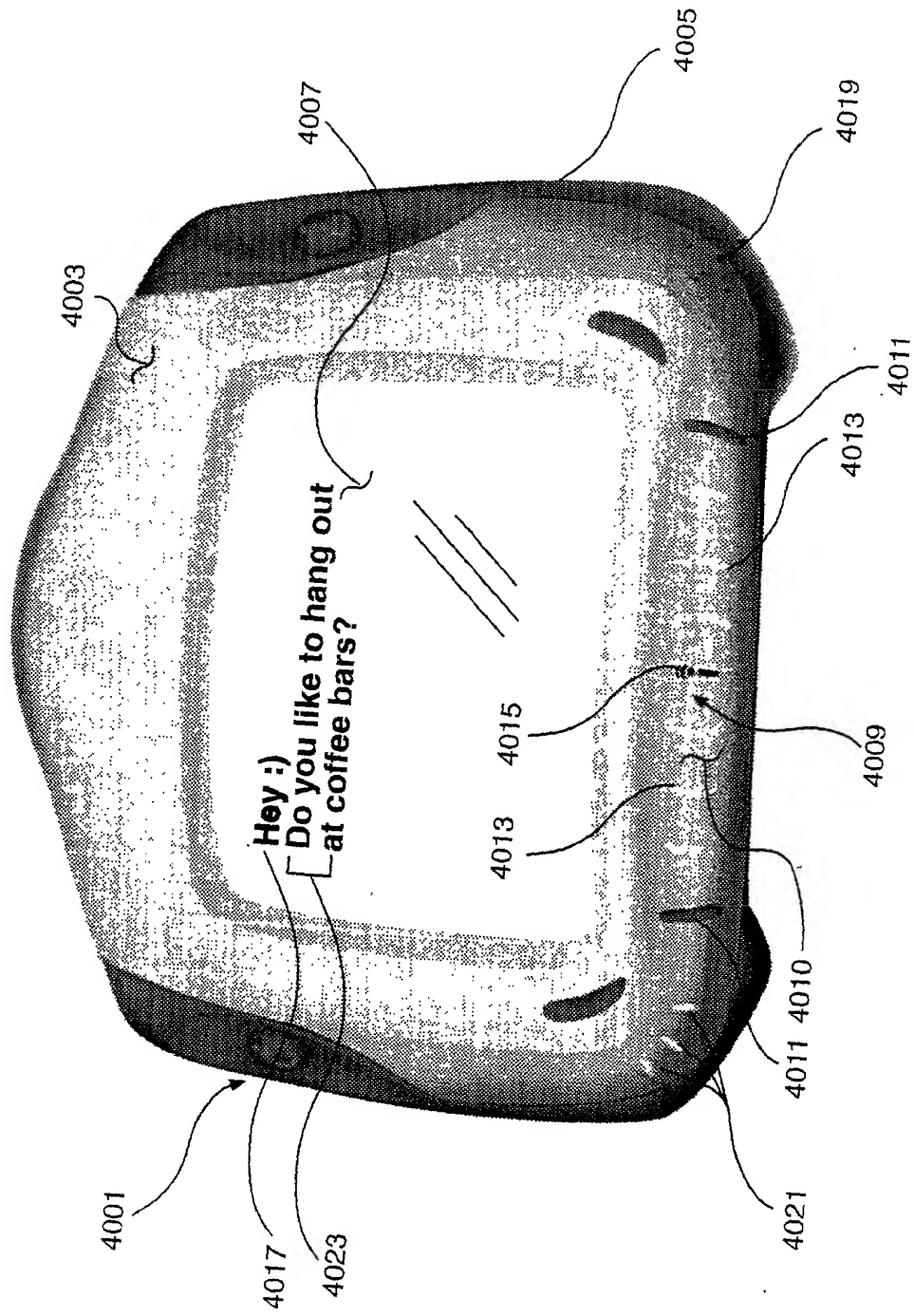


Figure 6C

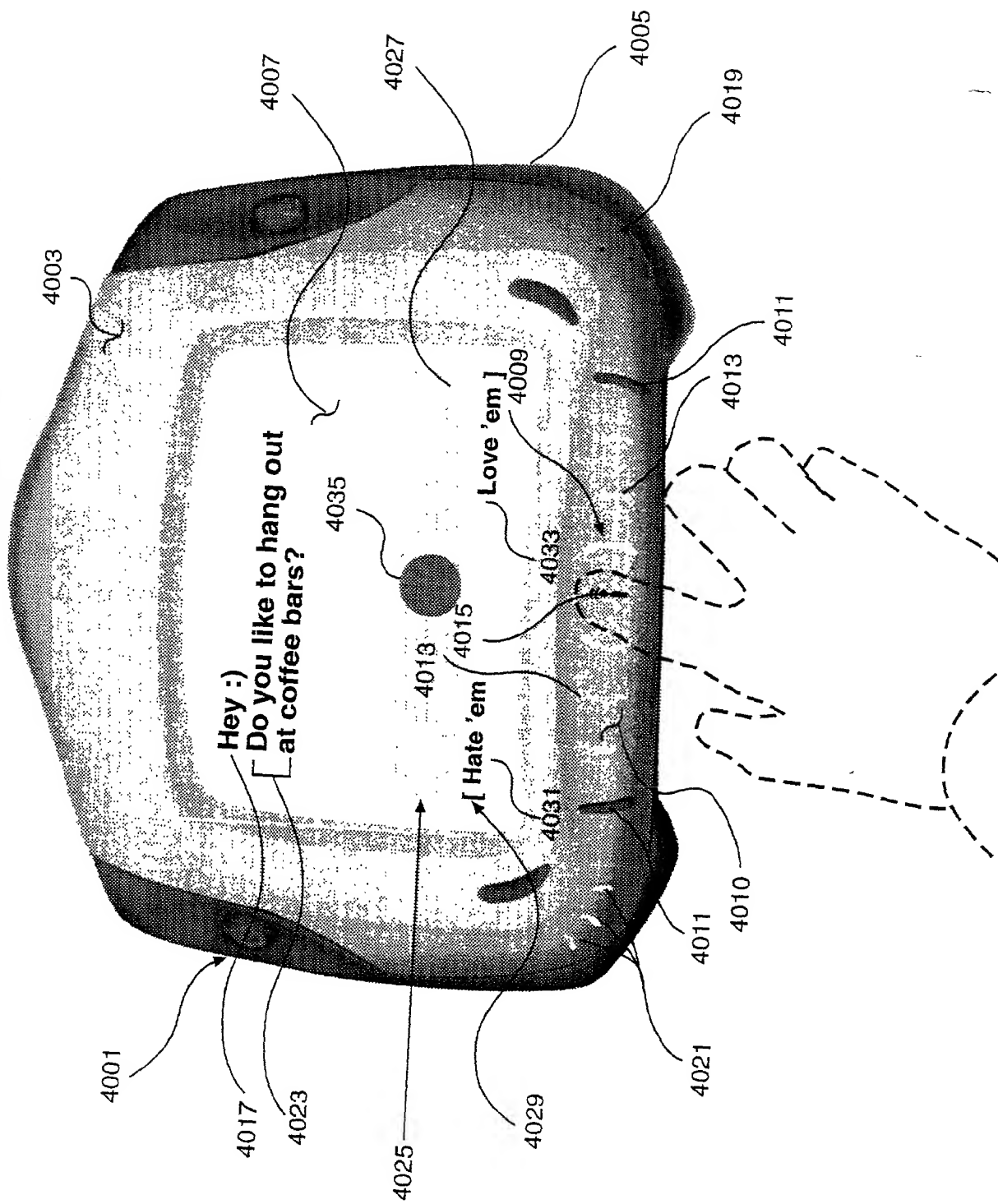
[illegible]

Figure 6D

+

+

+

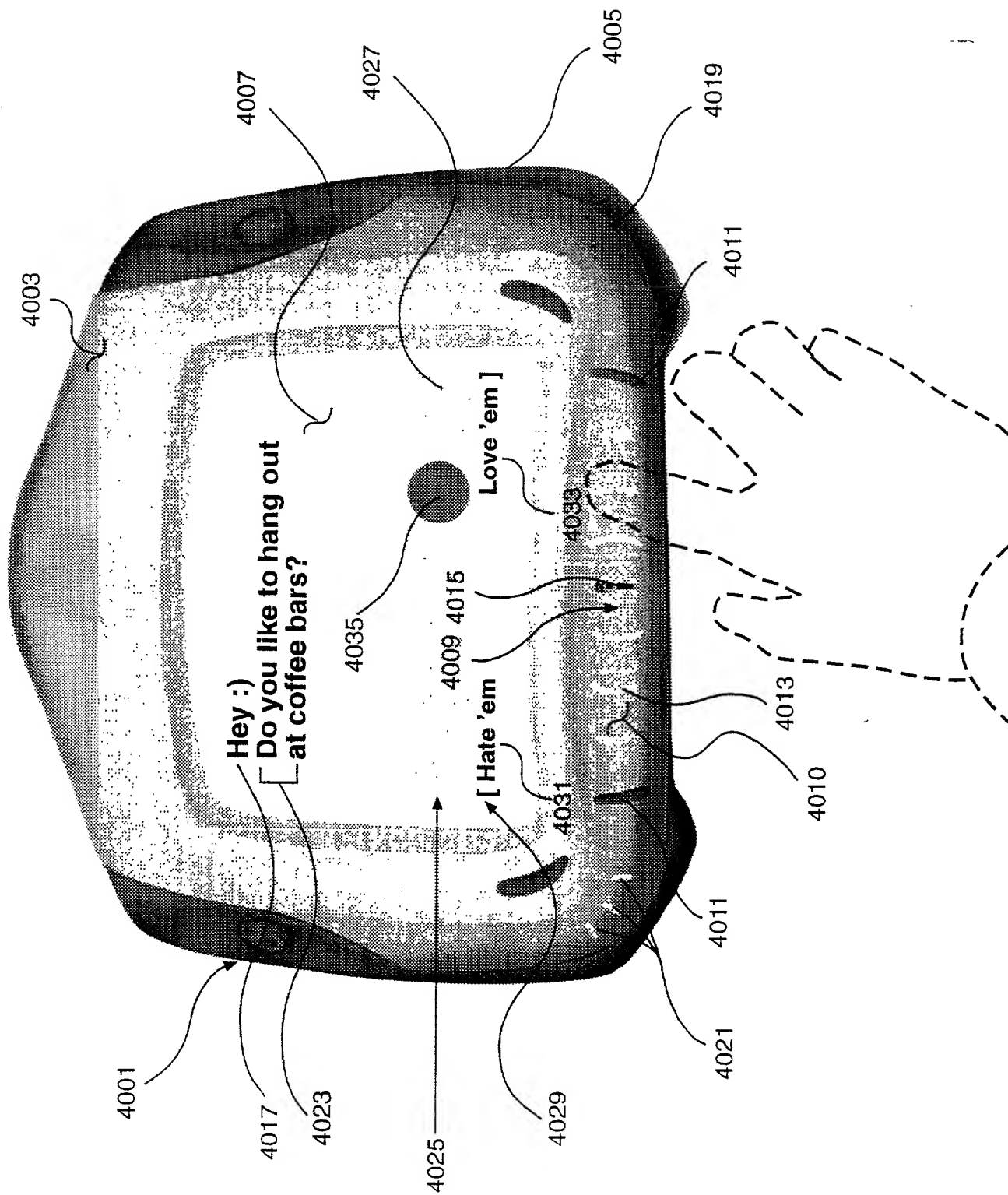


Figure 6E

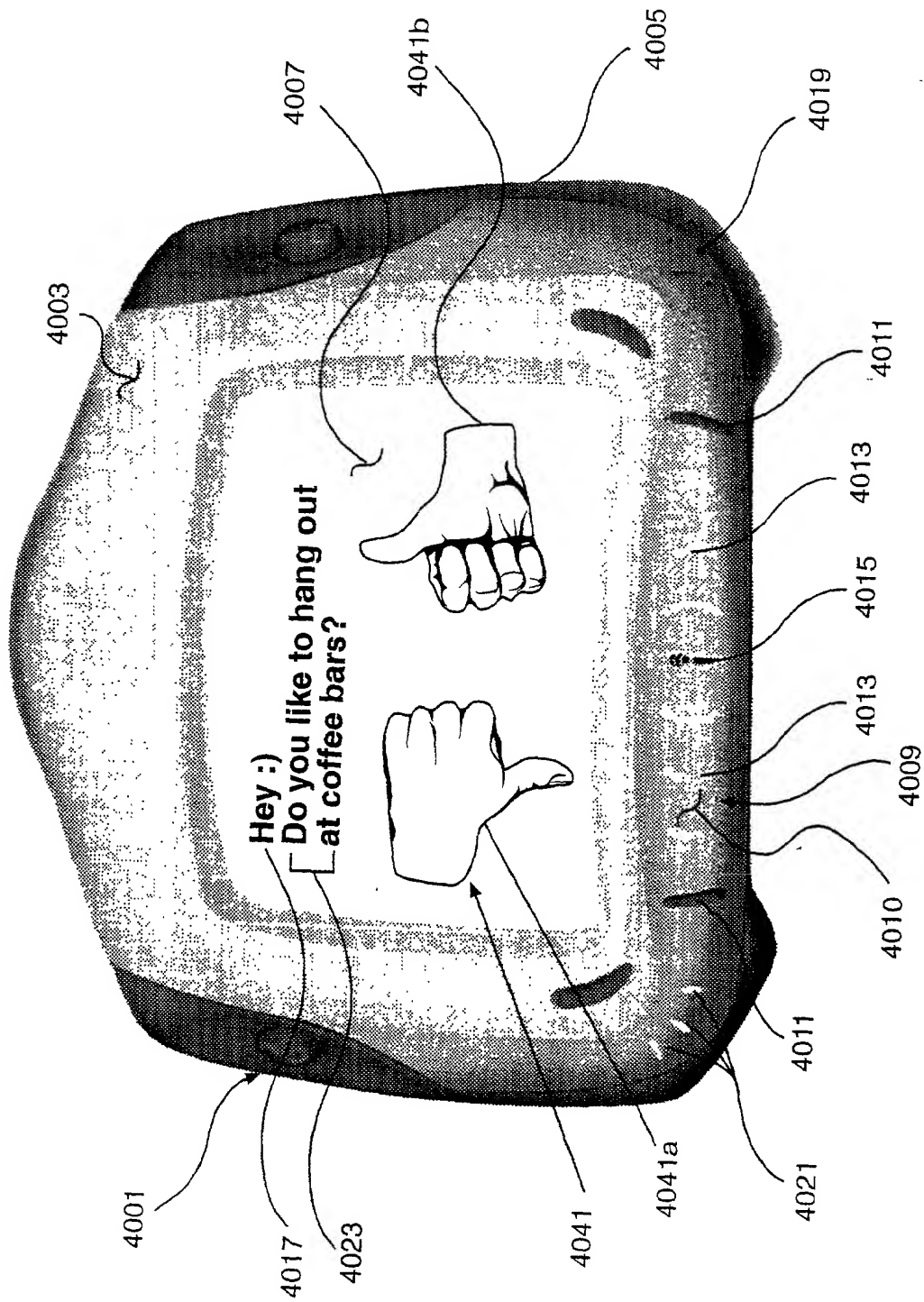


Figure 6F

FOICEBO" 2844466D

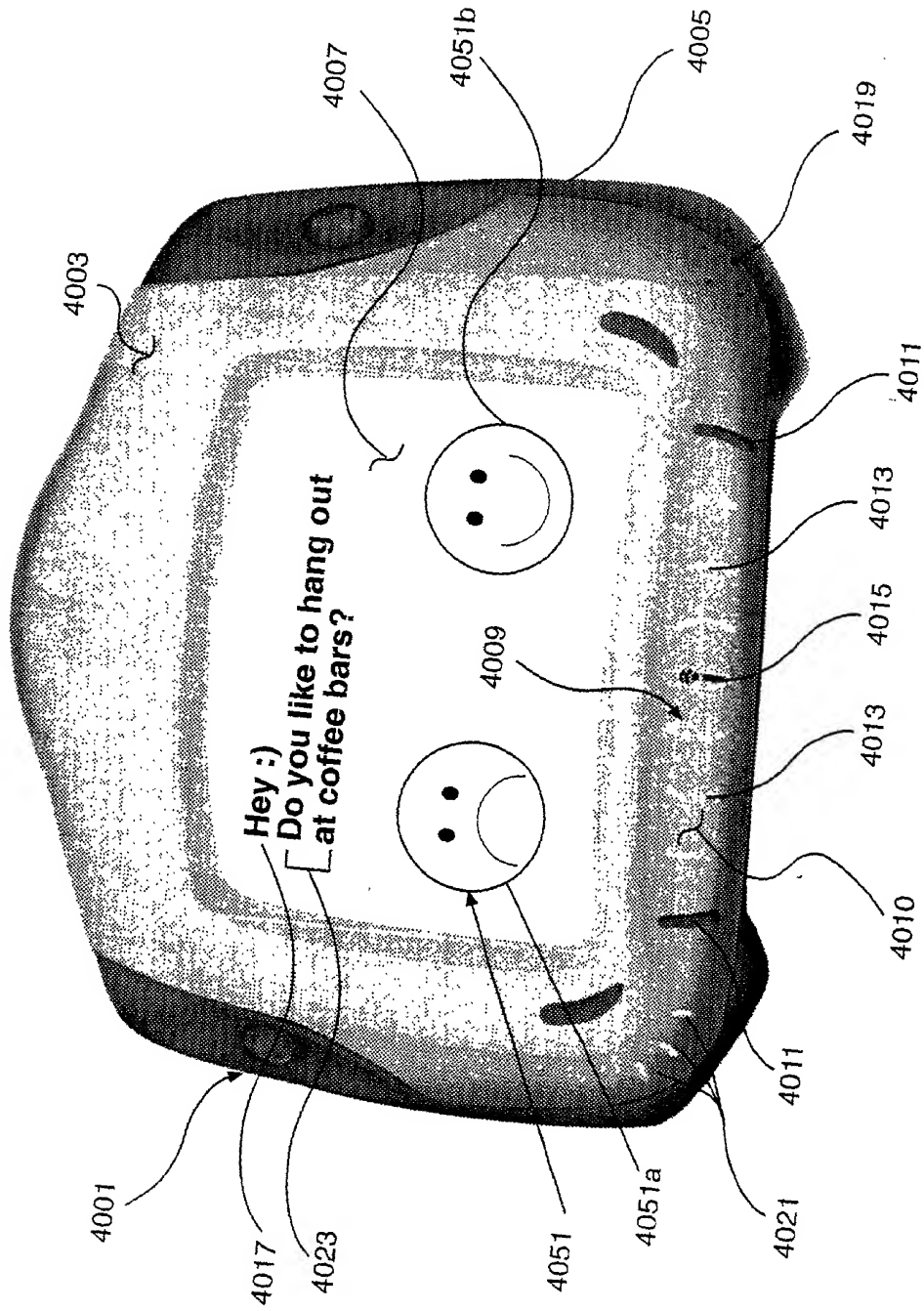


Figure 6G

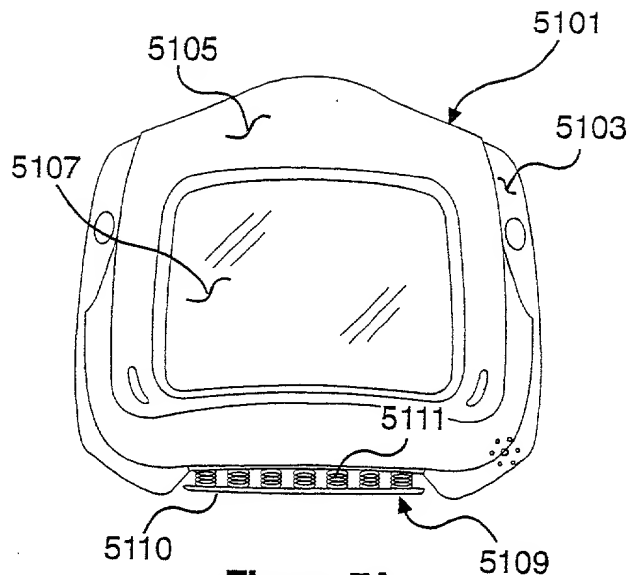


Figure 7A

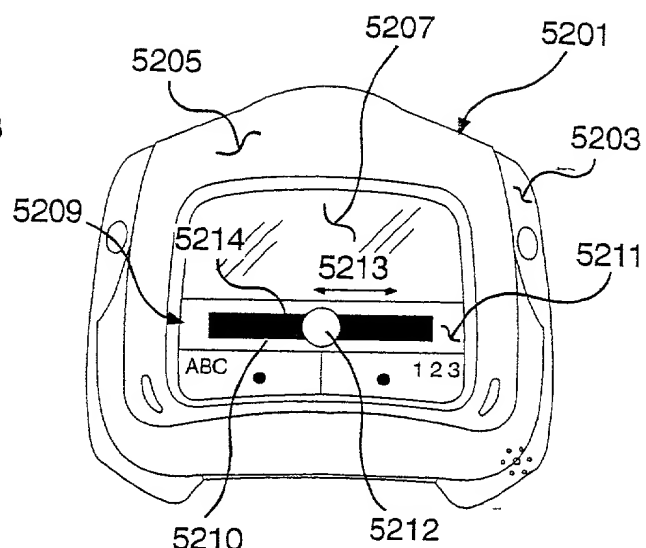


Figure 7B

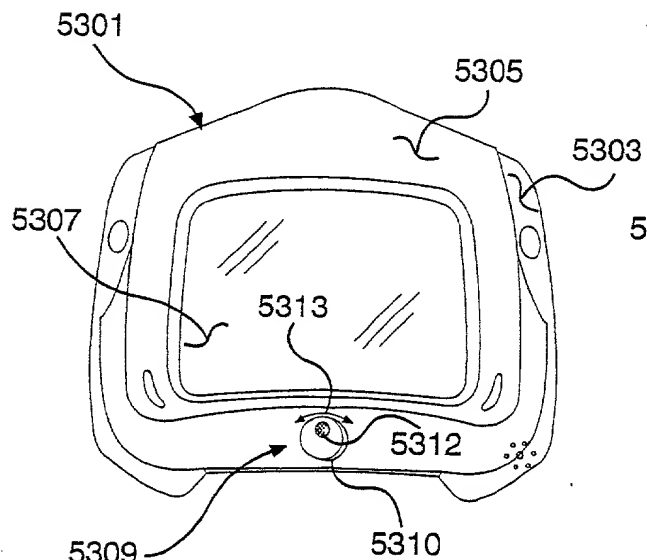


Figure 7C

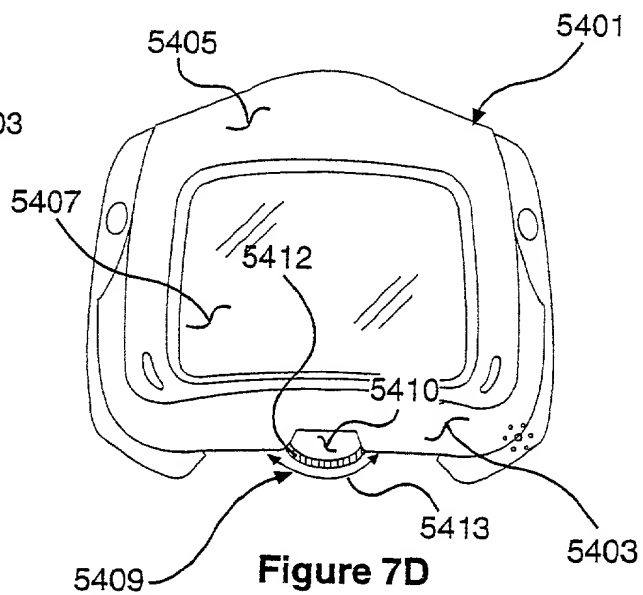


Figure 7D

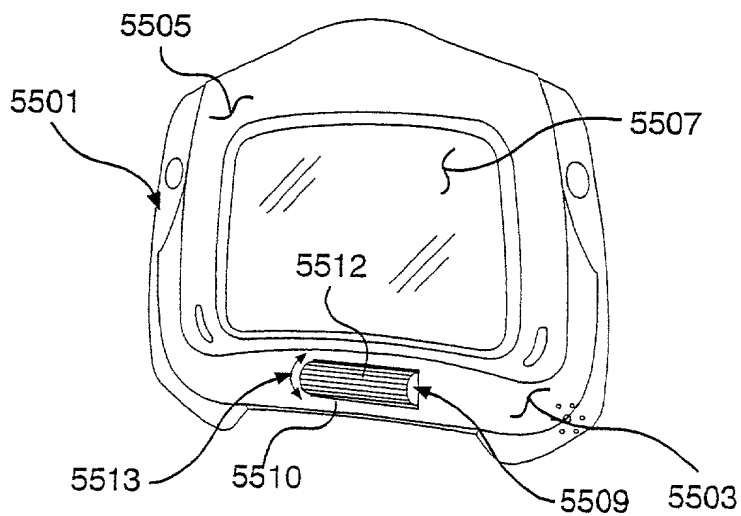


Figure 7E

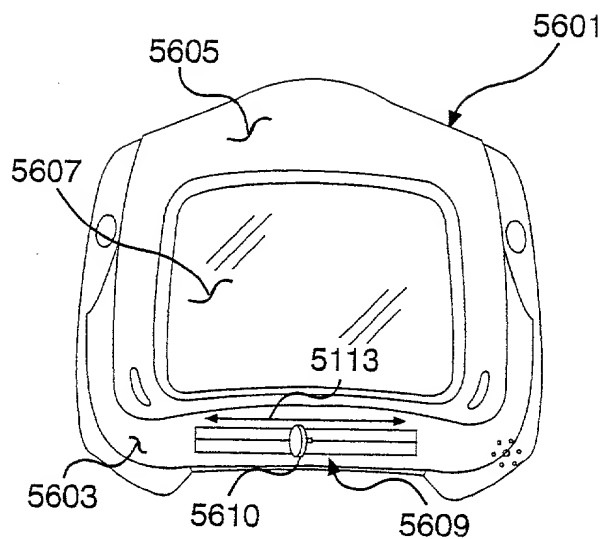


Figure 7F

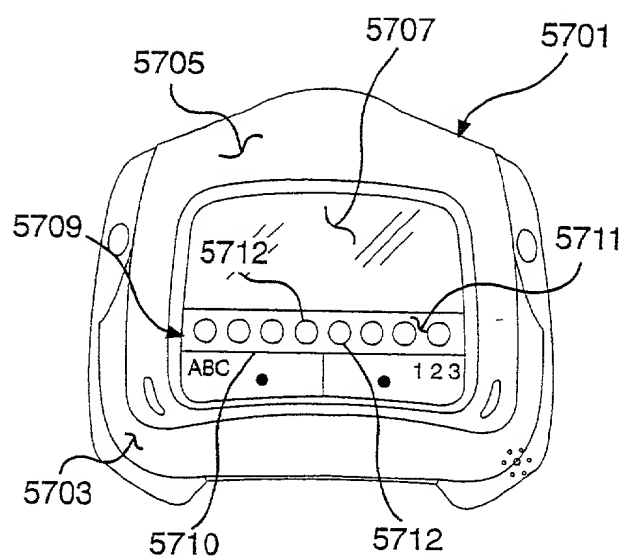


Figure 7G

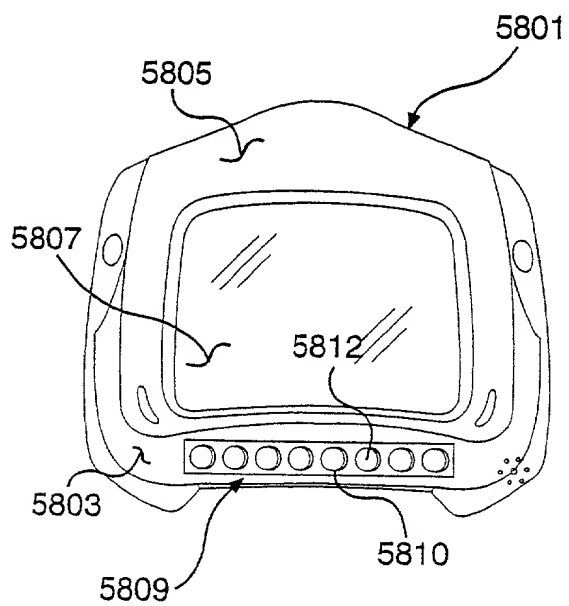


Figure 7H

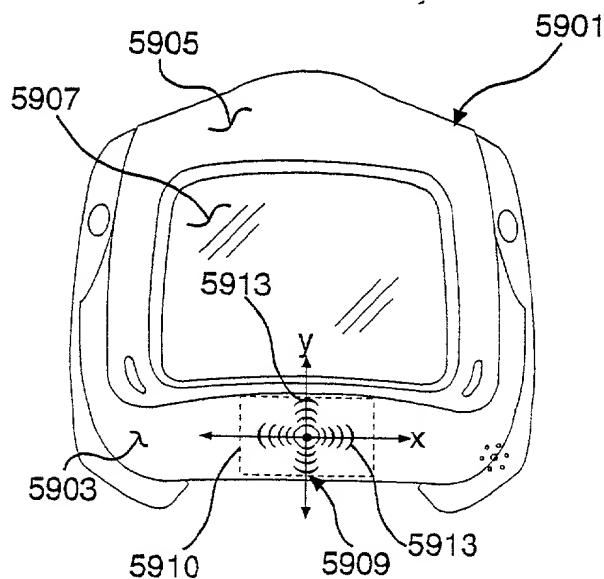


Figure 7I

TOP SECRET 2844660

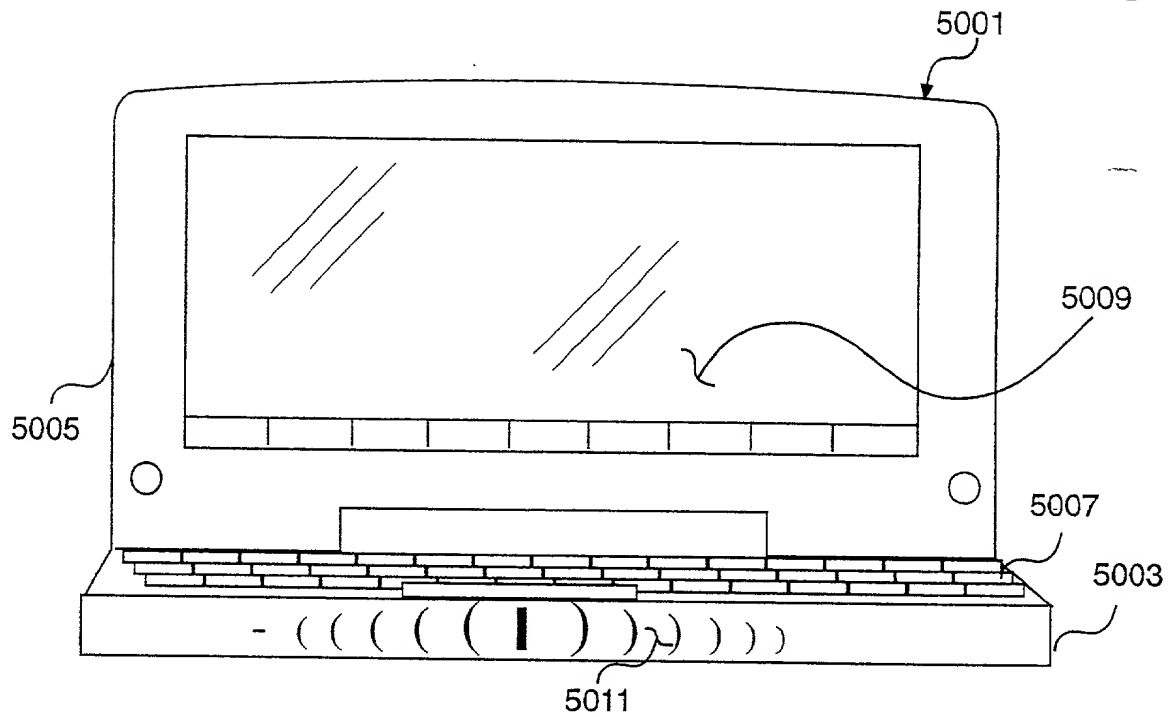


Figure 8A

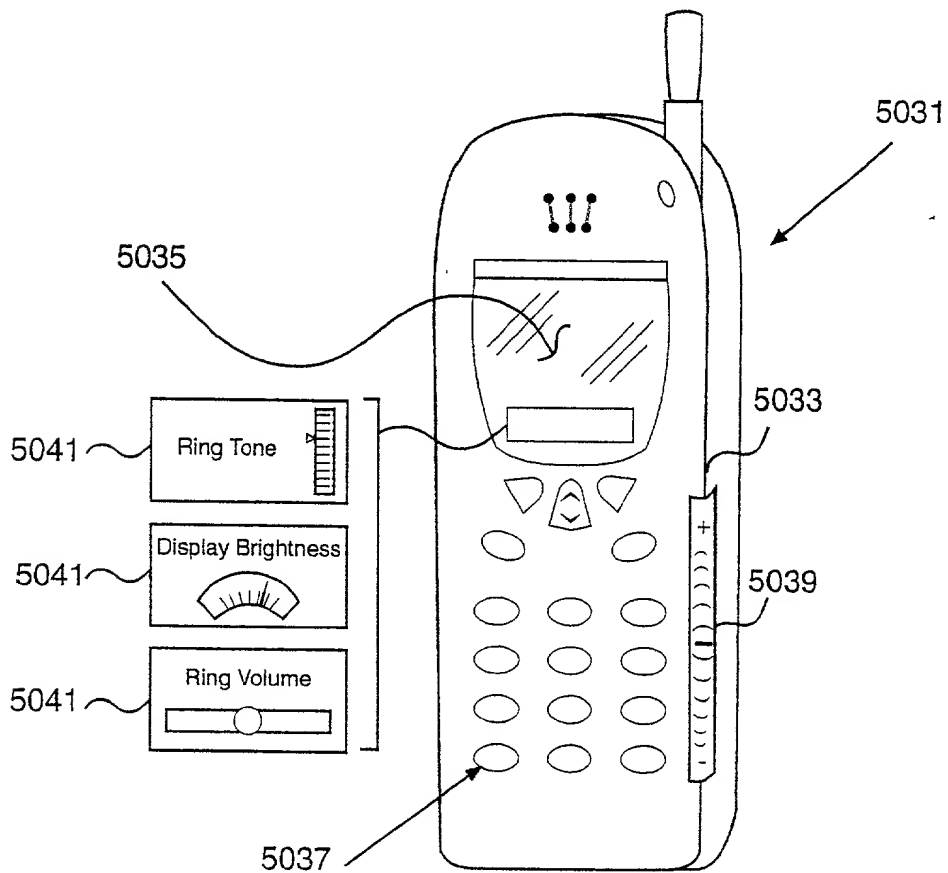


Figure 8B

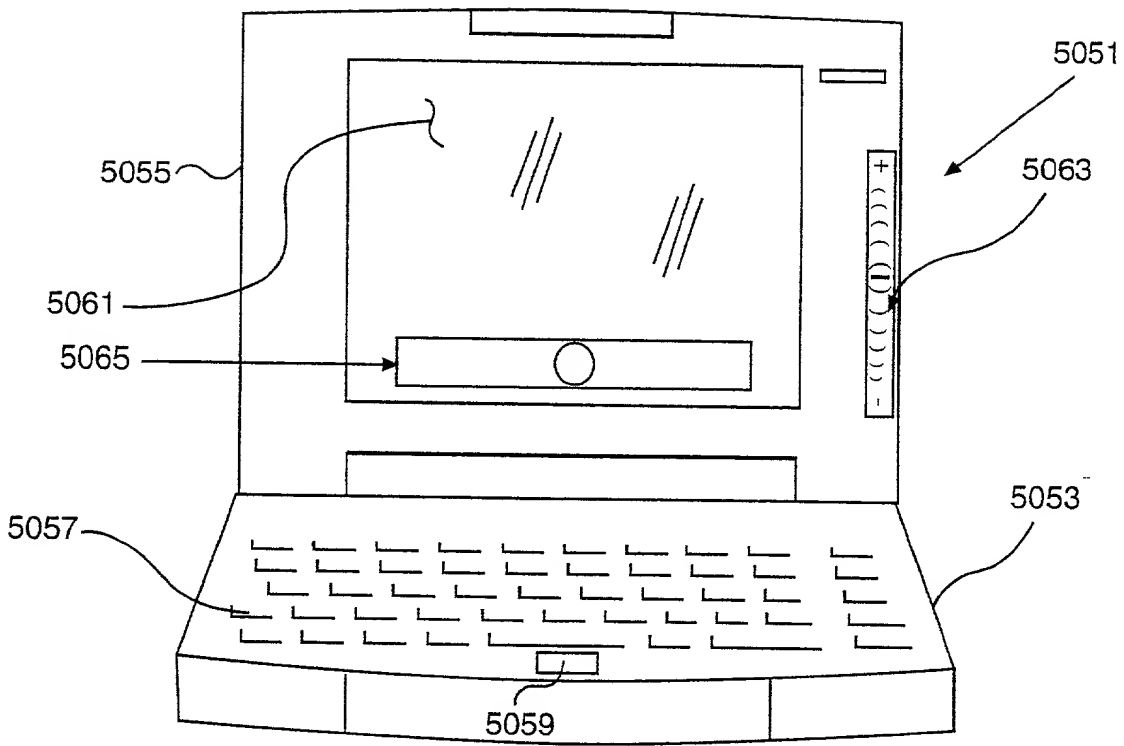


Figure 8C

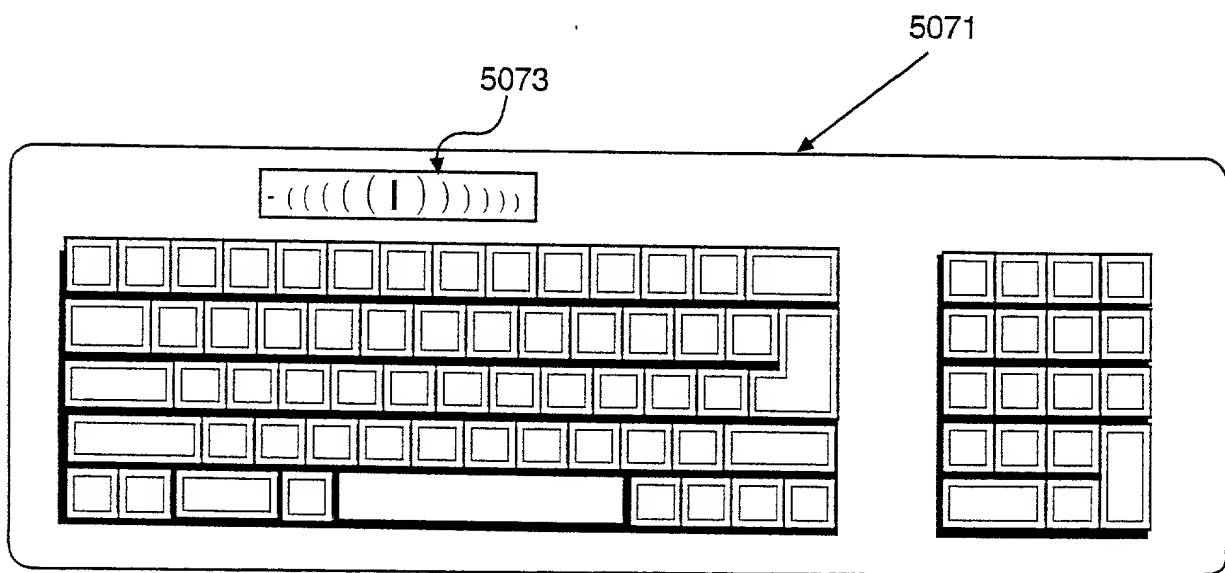


Figure 8D

TOP SECRET 2344650

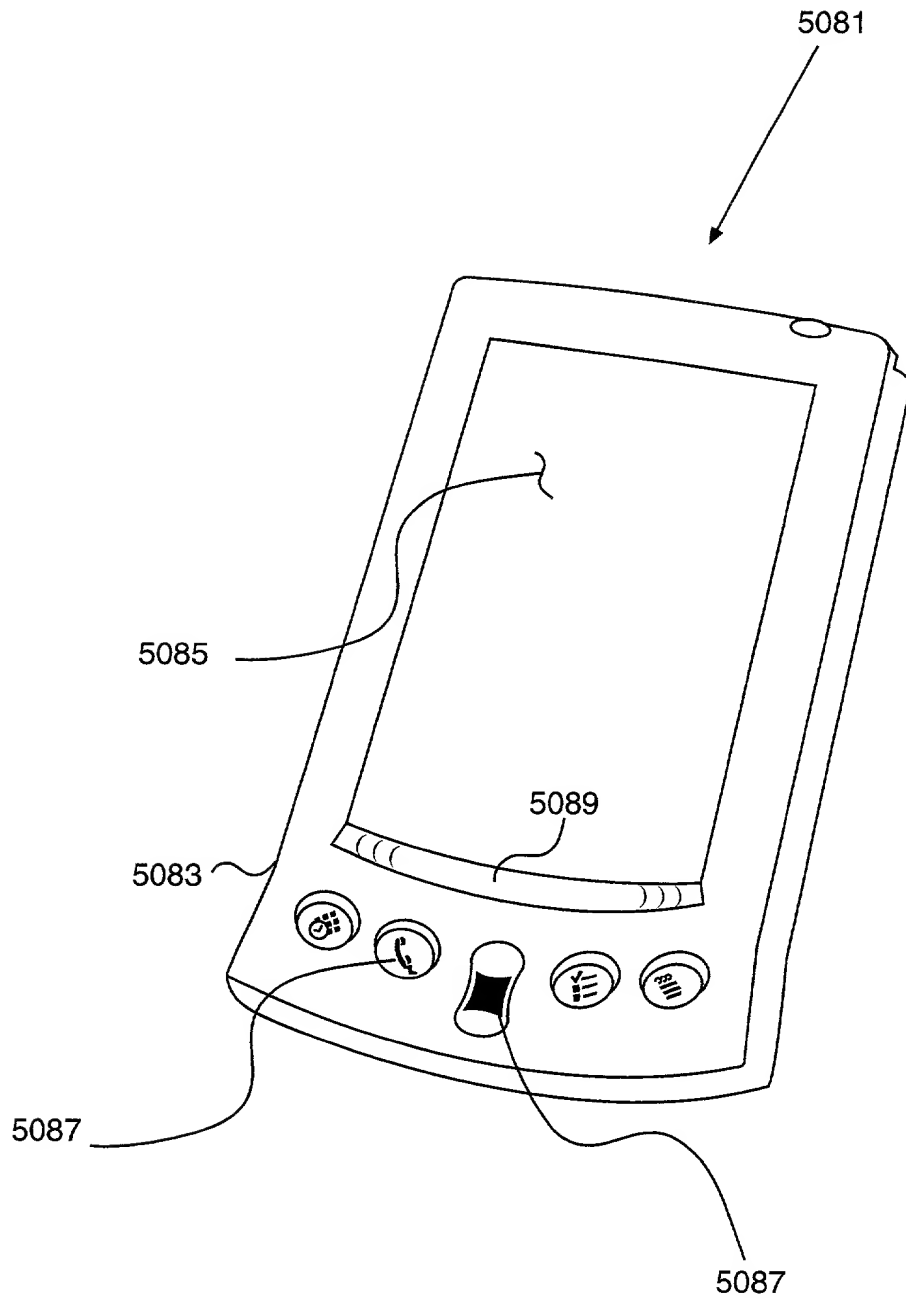


Figure 8E

TOP SECRET 2844660

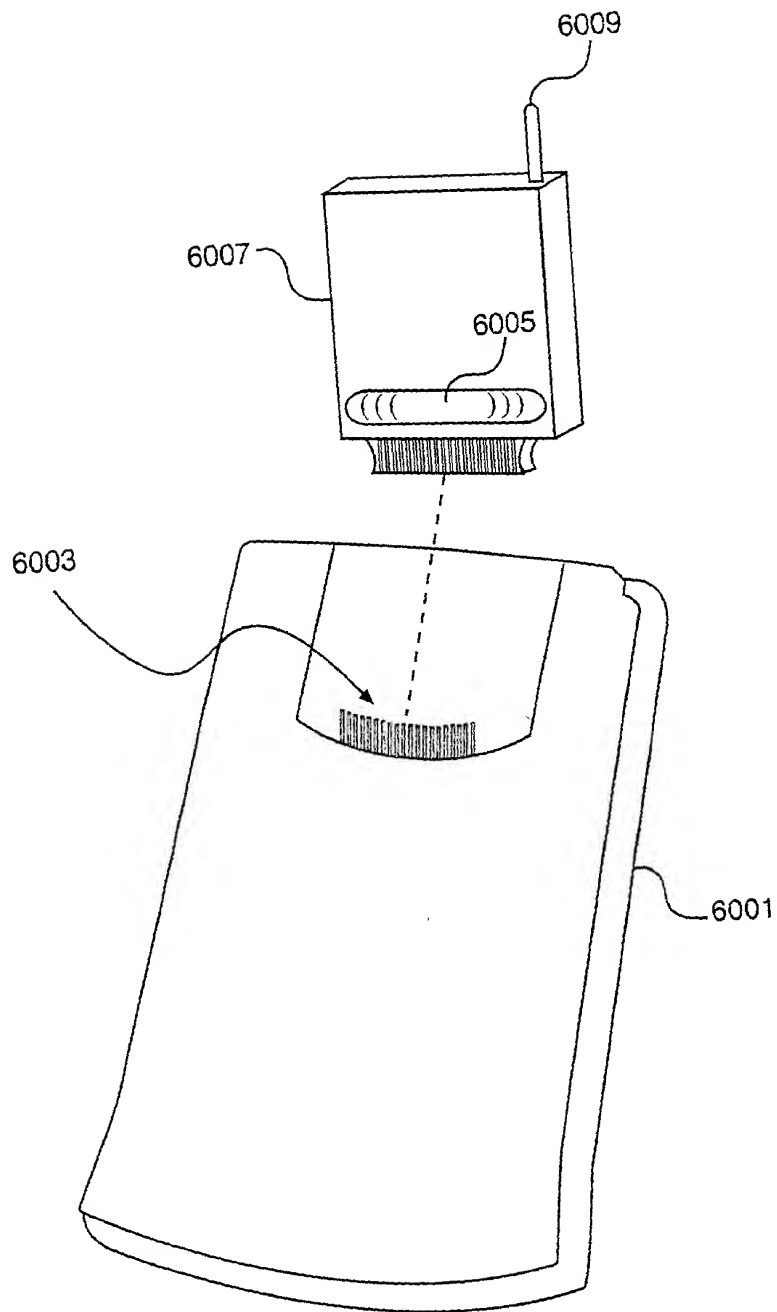


Figure 9

Age * Sex Crosstabulation

Age	Male	Female	Total
12	154	133	287
13	154	161	315
14	155	116	271
15	131	133	264
16	100	98	198
17	104	117	221
18	80	60	140
19	10	9	19
Total	888	827	1715

Fig 10A

Race * Sex Crosstabulation

Race		Male	Female	Total
White	N	783	714	1497
	%w/in race	52.30	47.70	100.00
Black	N	91	94	185
	%w/in race	49.19	50.81	100.00
Oriental	N	4	4	8
	%w/in race	50.00	50.00	100.00
American Indian	N	4		4
	%w/in race	100.00		100.00
Other	N	6	13	19
	%w/in race	31.58	68.42	100.00
Total	N	888	825	1713
	%w/in race	51.84	48.16	100.00

Fig 10B

Thumb Length

	N	Mean	Std Dev	1st	5th	50th	95th	99th
Total Males	292	6.3	0.7	5.0	5.3	6.3	7.3	8.1
Total Females	285	6.0	0.5	4.8	5.1	5.9	6.8	7.1
Males 12-15	196	6.1	0.6	5.0	5.2	6.1	7.1	7.8
Males 16-19	96	6.7	0.6	5.5	5.9	6.7	7.5	.
Females 12-15	198	5.9	0.5	4.7	5.0	5.9	6.8	7.0
Females 16-19	87	6.1	0.5	5.1	5.3	6.2	6.9	.

Fig. 10c

Thumb Length: Males

				Percentiles				
Age	N	Mean	Std Dev	1st	5th	50th	95th	99th
12	46	5.7	0.4	4.9	5.0	5.7	6.3	.
13	46	6.0	0.5	5.1	5.2	5.9	6.9	.
14	54	6.2	0.6	5.1	5.2	6.1	7.3	.
15	50	6.6	0.4	5.5	5.9	6.6	7.3	.
16	31	6.6	0.4	5.7	5.9	6.6	7.1	.
17	38	6.8	0.7	5.5	5.8	6.8	7.9	.
18	25	6.8	0.4	6.2	6.2	6.9	7.5	.
19	2	7.6	0.8	7.0	7.0	7.6	.	.

Fig. 10D

Thumb Length: Females

				Percentiles				
Age	Valid N	Mean	Std Dev	1st	5th	50th	95th	99th
12	48	5.7	0.5	4.7	4.9	5.8	6.5	.
13	61	5.9	0.5	4.6	4.9	5.8	6.6	.
14	44	5.9	0.5	4.8	5.0	5.9	6.9	.
15	45	6.1	0.4	5.4	5.4	6.0	6.9	.
16	25	6.2	0.5	5.1	5.2	6.3	7.1	.
17	42	6.0	0.5	5.1	5.2	6.0	7.0	.
18	16	6.2	0.3	5.7	5.7	6.2	.	.
19	4	6.1	0.3	5.7	5.7	6.1	.	.

Fig. 10E

1074430 " 2344660

[illegible]

Correlations: Total

		THUMB LENGTH	HAND LENGTH
THUMB LENGTH	Pearson Correlation	1	0.770
	Sig. (2-tailed)**	.	0.000
	N	577	576
HAND LENGTH	Pearson Correlation	0.770	1
	Sig. (2-tailed)**	0.000	.
	N	576	1707

** Correlation is significant at the 0.01 level (2-tailed)**.

Fig. 10 G

Correlations: Male

		THUMB LENGTH	HAND LENGTH
THUMB LENGTH	Pearson Correlation	1	0.790
	Sig. (2-tailed)**	.	0.000
	N	292	291
HAND LENGTH	Pearson Correlation	0.790	1
	Sig. (2-tailed)**	0.000	.
	N	291	882

** Correlation is significant at the 0.01 level (2-tailed)**.

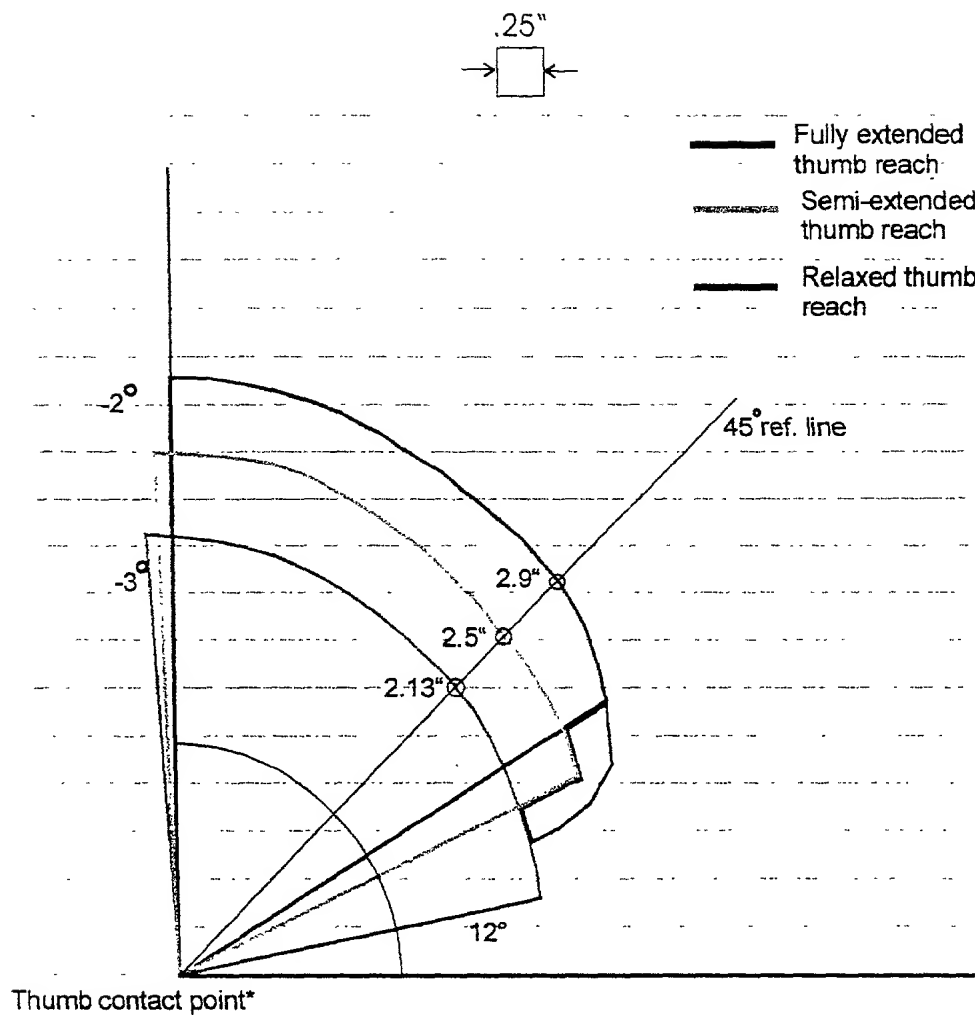
Correlations: Female

		THUMB LENGTH	HAND LENGTH
THUMB LENGTH	Pearson Correlation	1	0.657
	Sig. (2-tailed)**	.	0.000
	N	285	285
HAND LENGTH	Pearson Correlation	0.657	1
	Sig. (2-tailed)**	0.000	.
	N	285	825

**	Correlation is significant at the 0.01 level (2-tailed)**.
----	--

Fig. 10H

TOP SECRET 2244660



1st Percentile Left Thumb Sweeps, Females Age 12-19
(Uniform object thickness 0.75", corner radius 1.5")

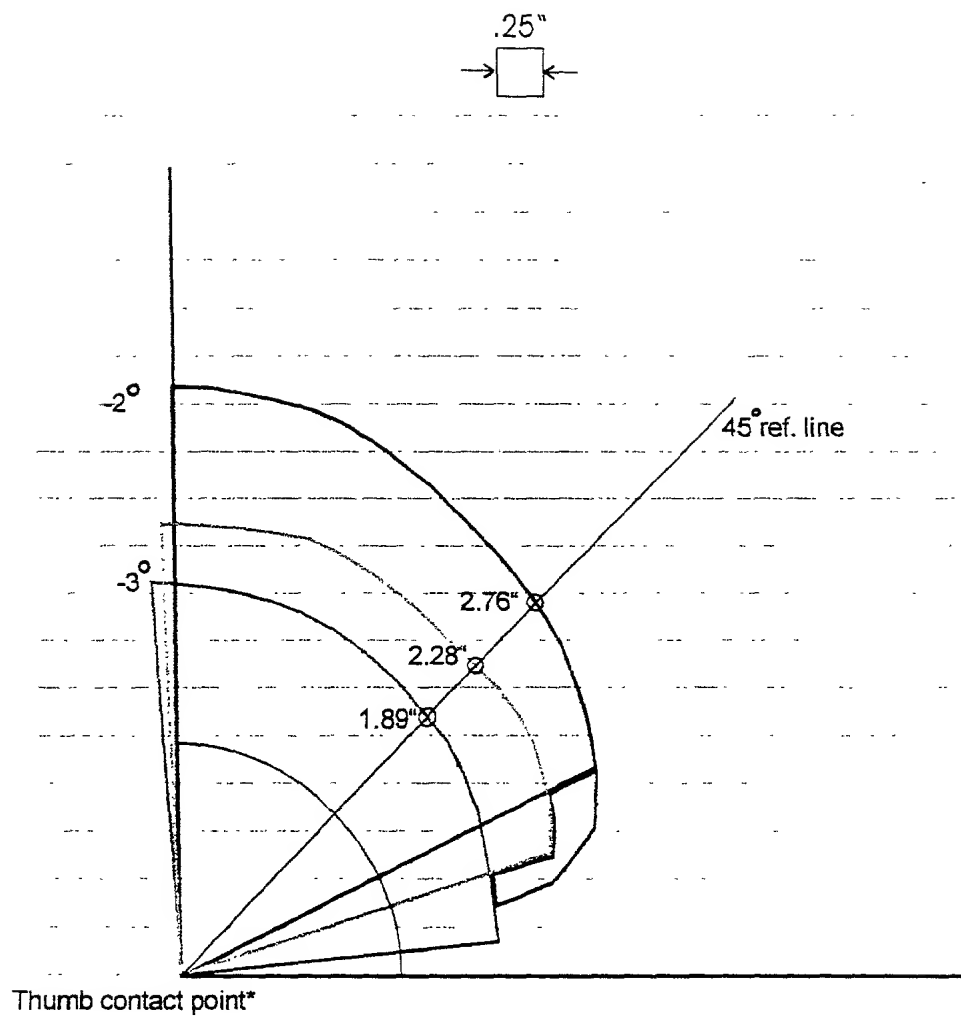
Note: each data point represents thumb tip at centerline of thumb

* Located vertically over point of thumb base contact with corner, at midpoint of lower corner radius on device

Fig 10I

C23

TOP SECRET



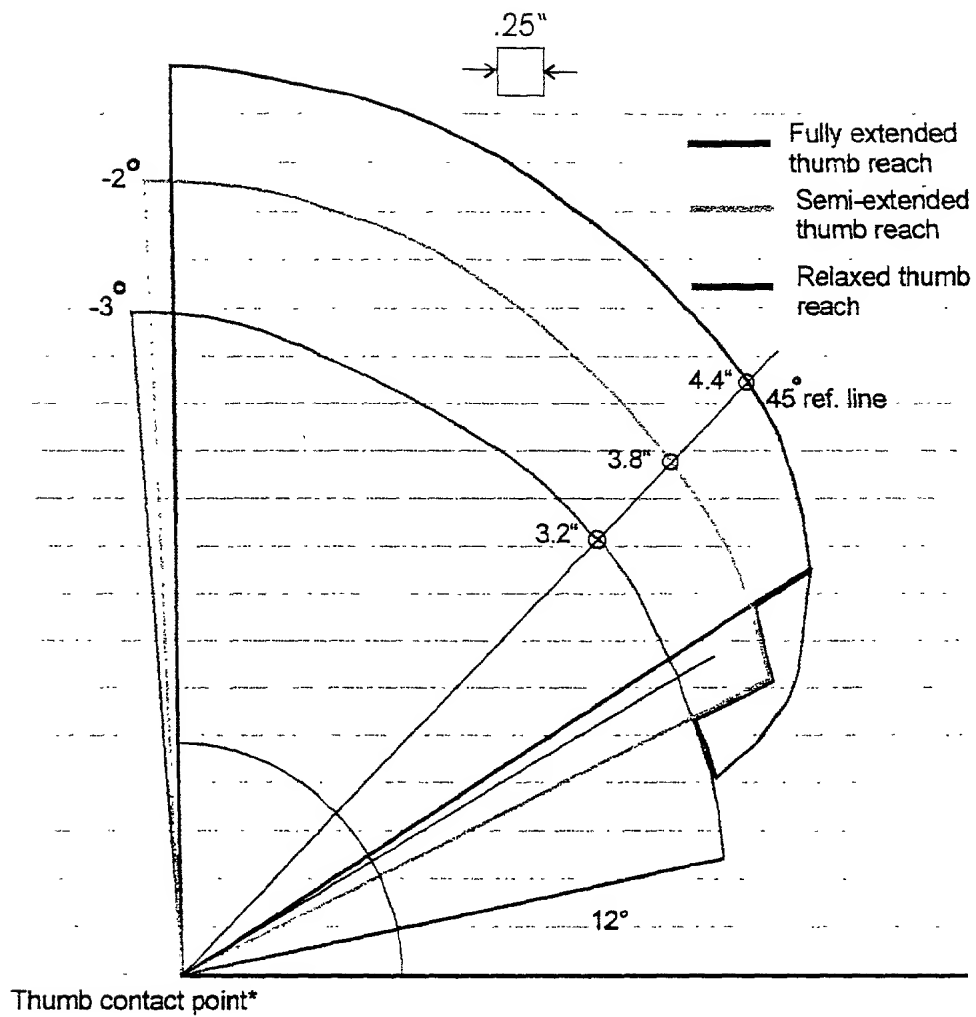
1st Percentile Left Thumb Sweeps, Females Age 12-19
(Uniform object thickness 0.75", corner radius 0.75")

* Located vertically over point of thumb base contact with corner,
at midpoint of lower corner radius on device

Fig. 10J

C24

TOP SECRET 23444560

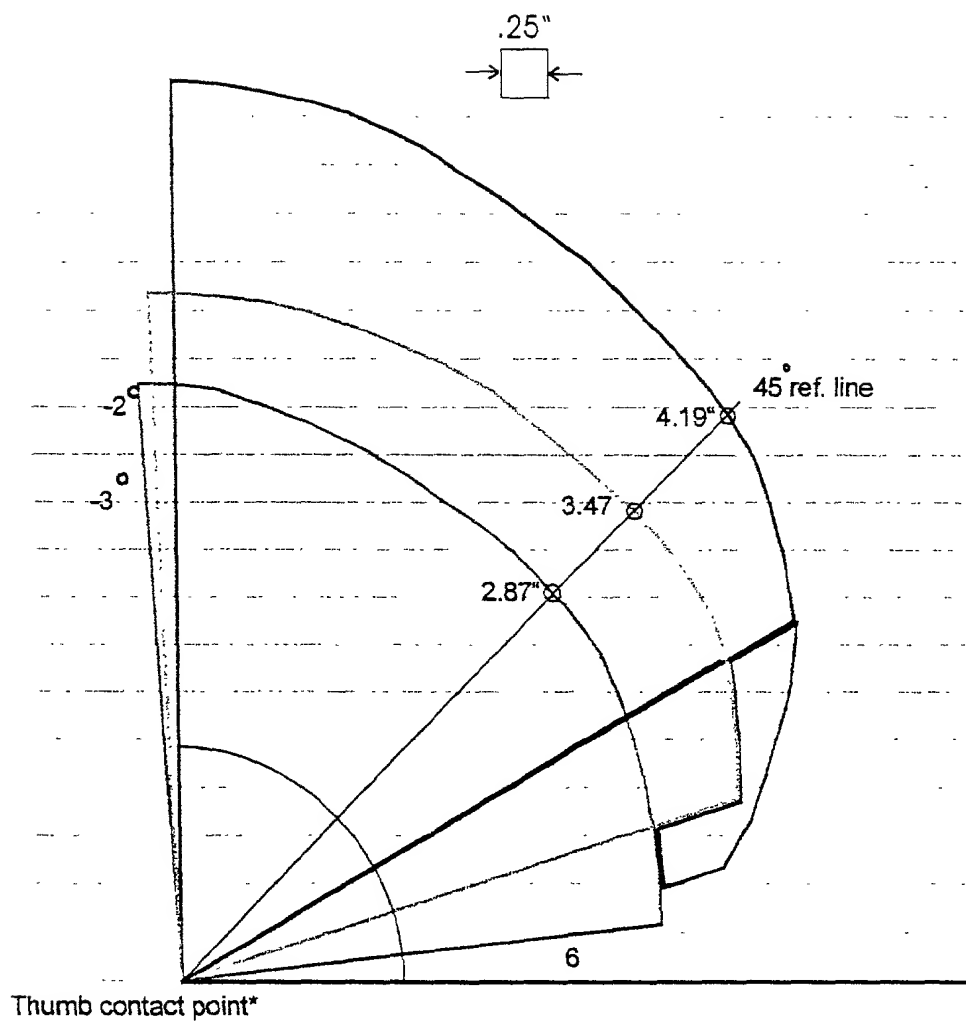


95th Percentile Left Thumb Sweeps, Male Age 12-19
(Uniform object thickness 0.75", corner radius 1.5")
Note: each data point represents thumb tip at centerline of thumb

* Located vertically over point of thumb base contact with corner,
at midpoint of lower corner radius on device

Fig 10K

C25

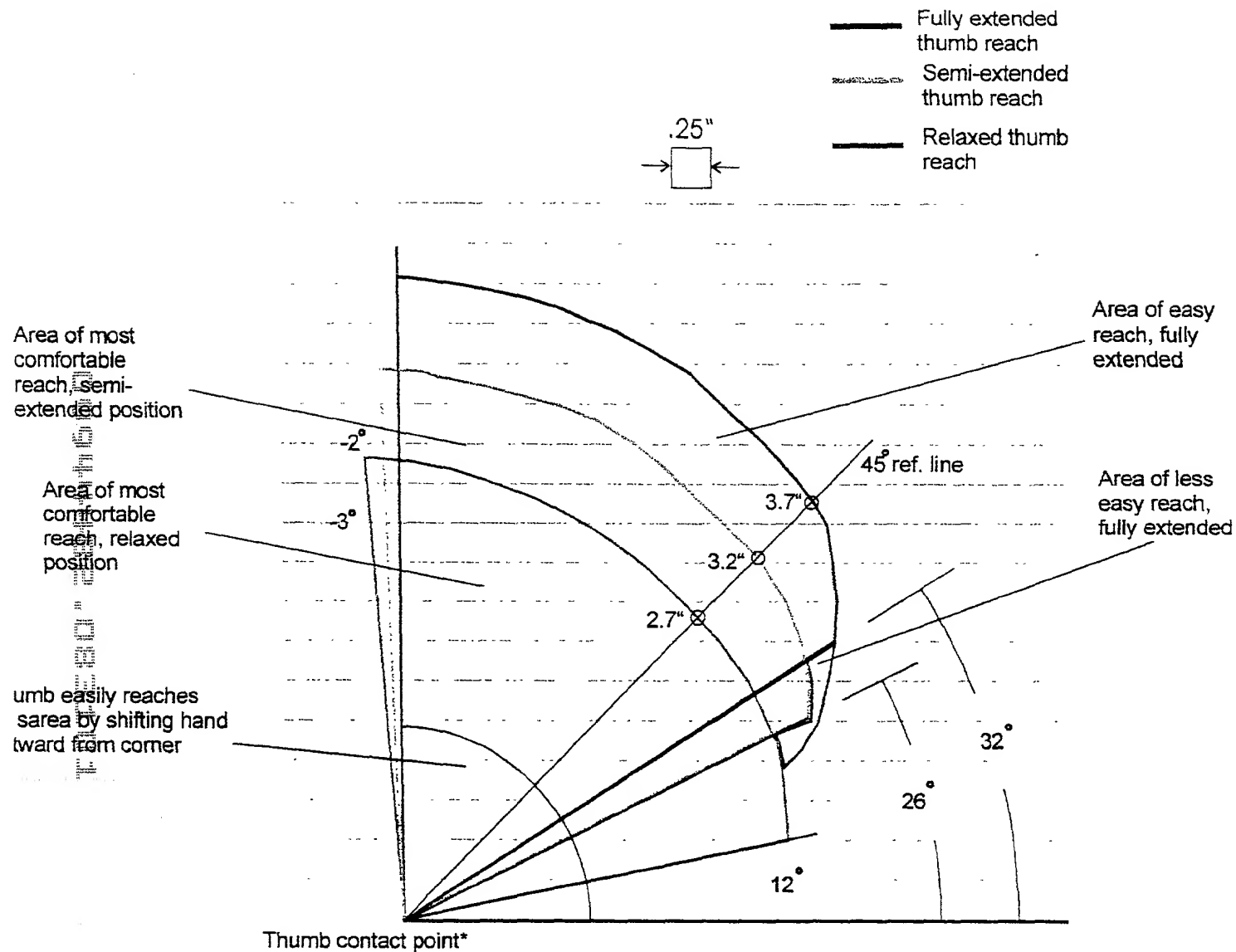


95th Percentile Left Thumb Sweeps, Male Age 12-19
(Uniform object thickness 0.75", corner radius 0.75")

* Located vertically over point of thumb base contact with corner,
at midpoint of lower corner radius on device

Fig 10L

C26



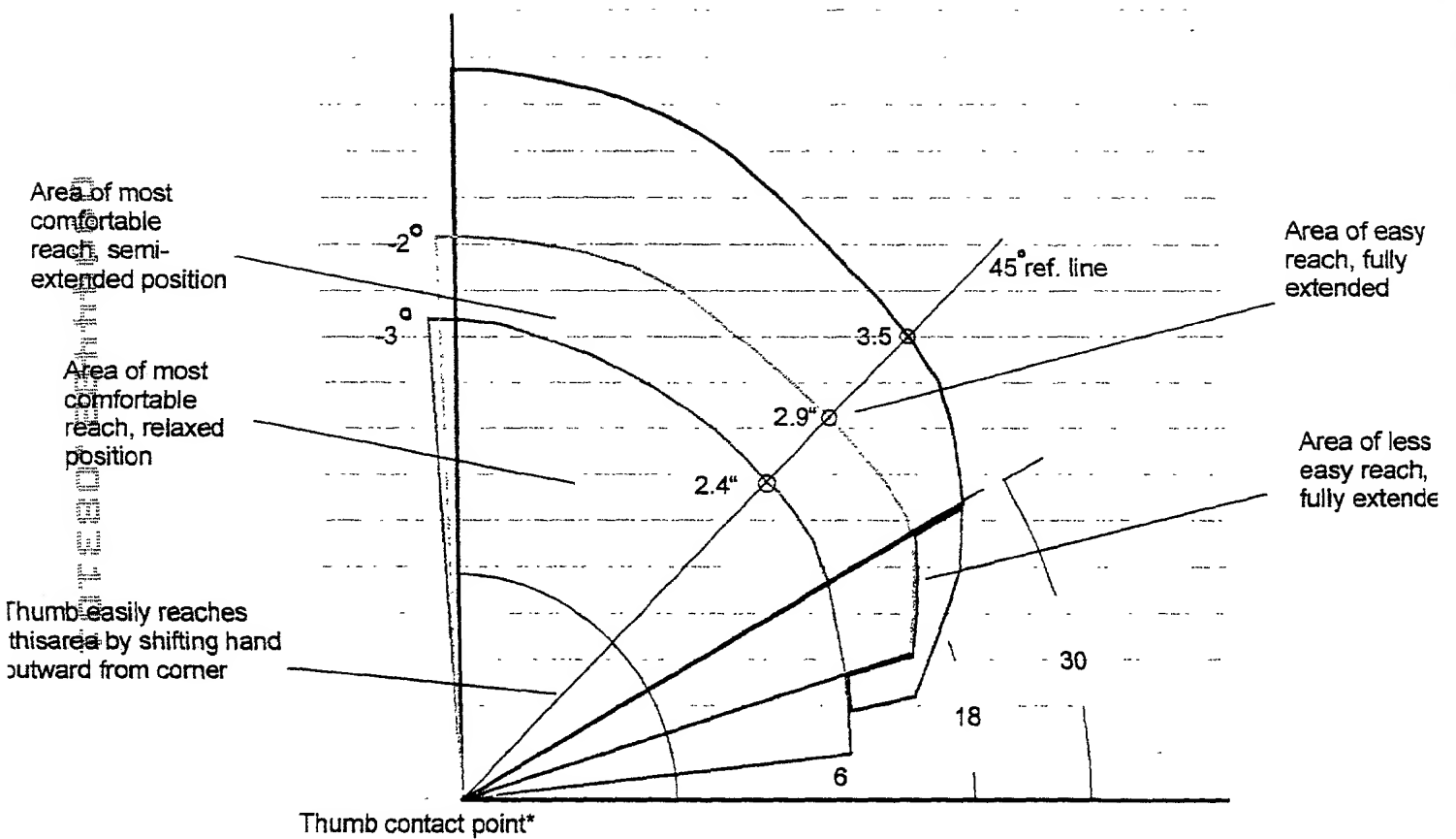
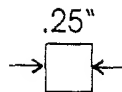
50th Percentile Left Thumb Sweeps, M+F Age 12-19
(Uniform object thickness 0.75", corner radius 1.5")

Note: Each data point represents thumb tip at centerline of thumb

* Located vertically over point of thumb base contact with corner,
at midpoint of lower corner radius on device

Fig. 10M

C27

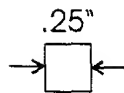


50th Percentile Left Thumb Sweeps, M+F Age 12-19
(Uniform object thickness 0.75", corner radius 0.75")

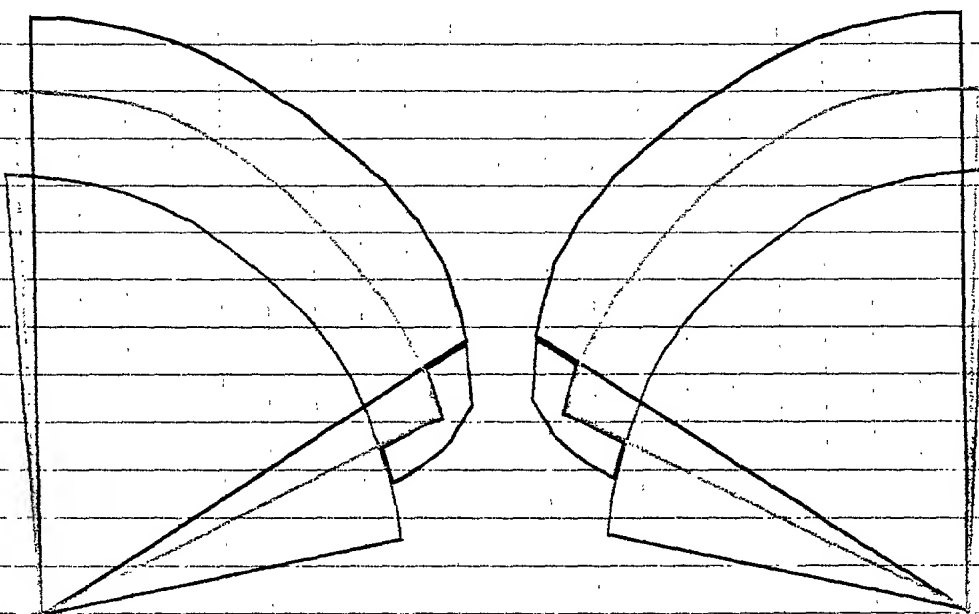
* Located vertically over point of thumb base contact with corner, at midpoint of lower corner radius on device

Fig 10N

C28



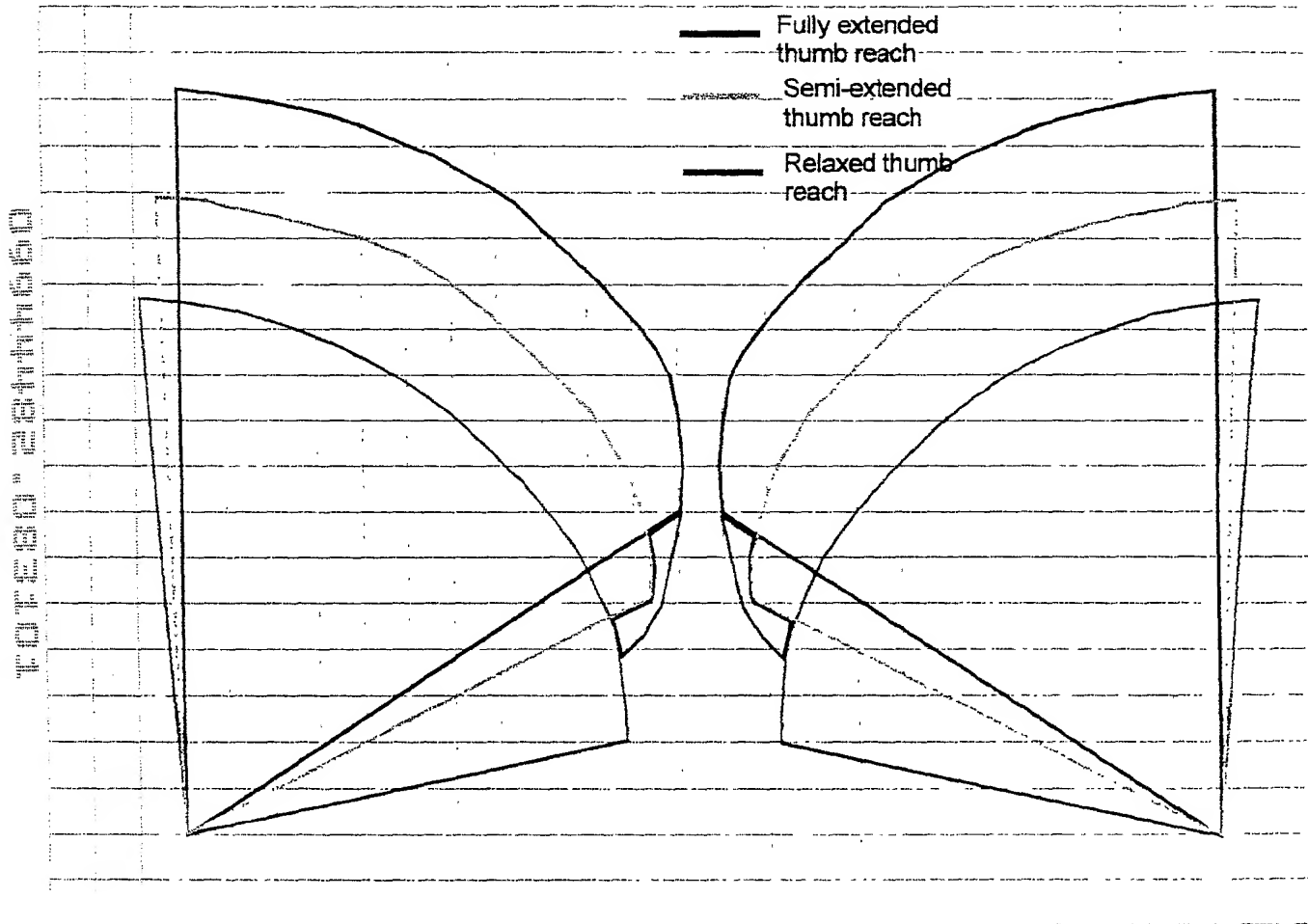
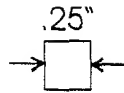
— Fully extended thumb reach
 — Semi-extended thumb reach
 — Relaxed thumb reach



1st Percentile Combined Thumb Sweeps, Females Age 12-19
 (Uniform object thickness 0.75", corner radius 1.5")

Note: each data point represents thumb tip at centerline of thumb

* Located vertically over point of thumb base contact with corner,
 at midpoint of lower corner radius on device



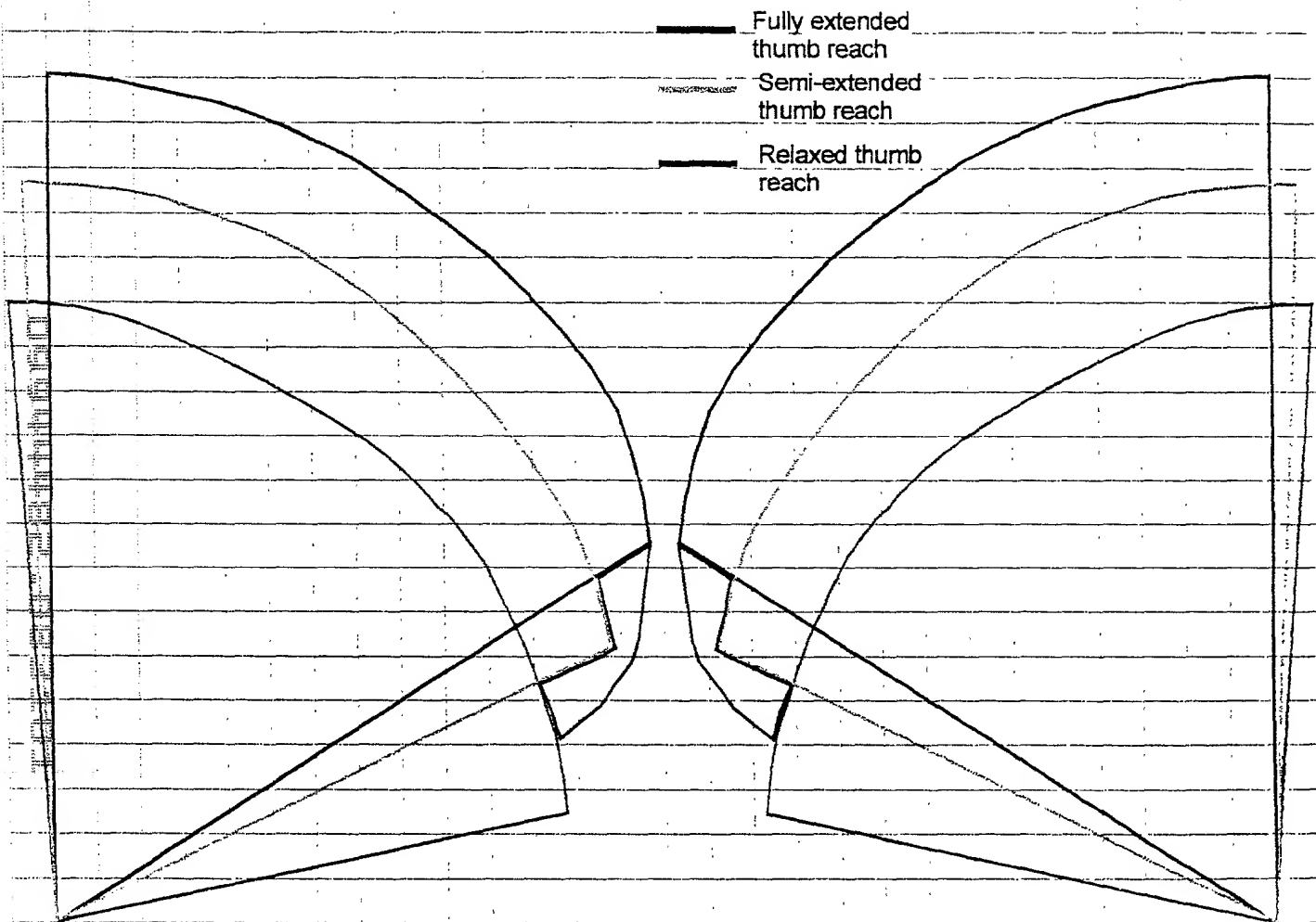
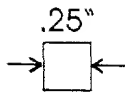
50th Percentile Combined Thumb Sweeps, Male+Females Age 12-19
(Uniform object thickness 0.75", corner radius 1.5")

Notes: Each data point represents thumb tip at centerline of thumb
Left and right thumb envelopes are arbitrarily placed relative to each other
to permit cutting or measurements without overlapped reach lines

* Located vertically over point of thumb base contact with corner,
at midpoint of lower corner radius on device

Fig. 10A

C30



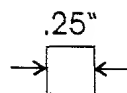
95th Percentile Combined Thumb Sweeps, Males Age 12-19
 (Uniform object thickness 0.75", corner radius 1.5")





Notes: Each data point represents thumb tip at centerline of thumb
 Left and right thumb envelopes are arbitrarily placed relative to each other
 to permit cutting or measurements without overlapped reach lines

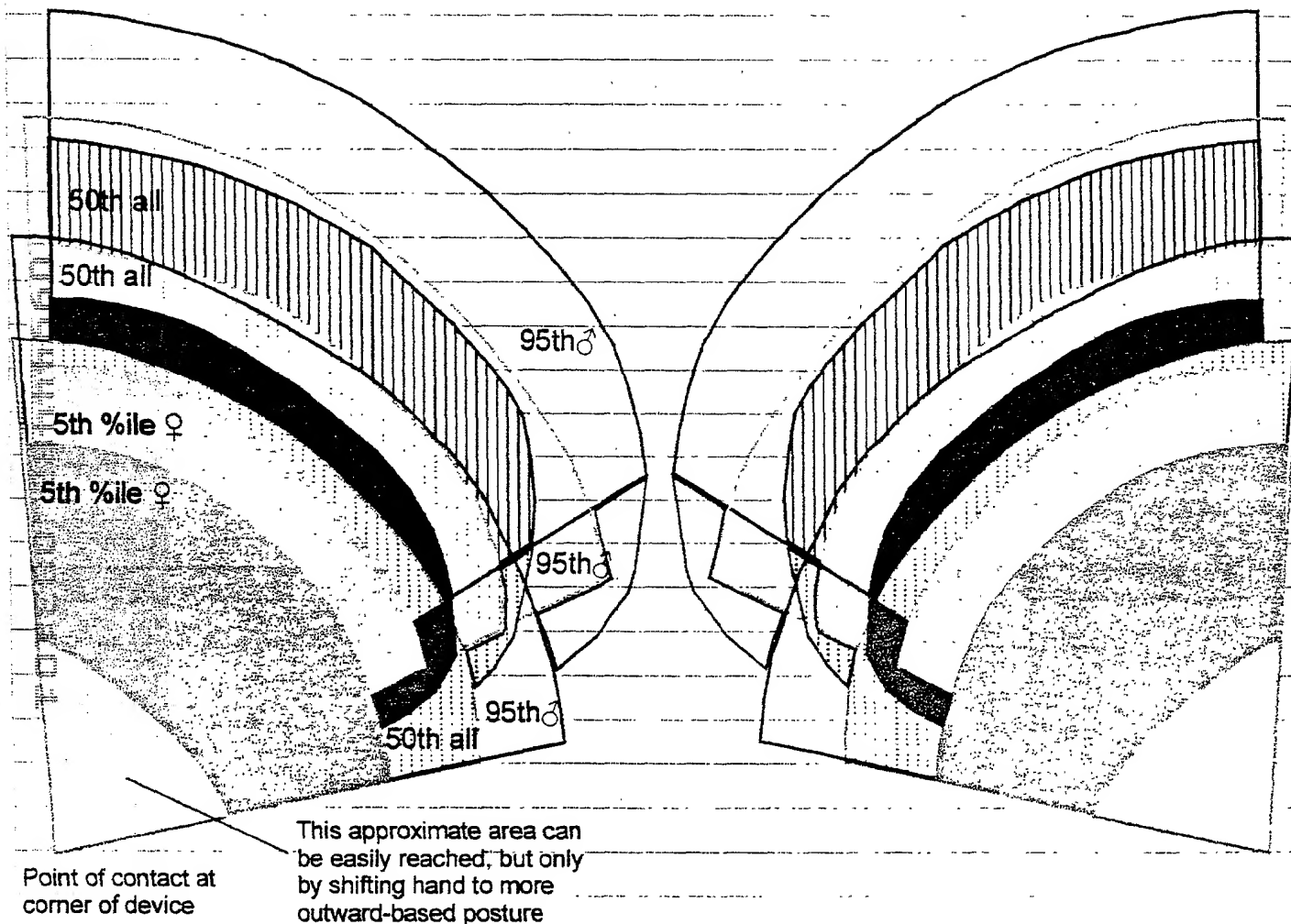
* Located vertically over point of thumb base contact with corner,
 at midpoint of lower corner radius on device

Fig 10Q

C31



-  Fully extended thumb reach
-  Semi-extended thumb reach
-  Relaxed thumb reach
-  Area reached with some difficulty while fully extended



Combined Thumb Sweeps, 1st Percentile Females Through 95th Percentile Males Age 12-19

(Uniform object thickness 0.75", corner radius 1.5")

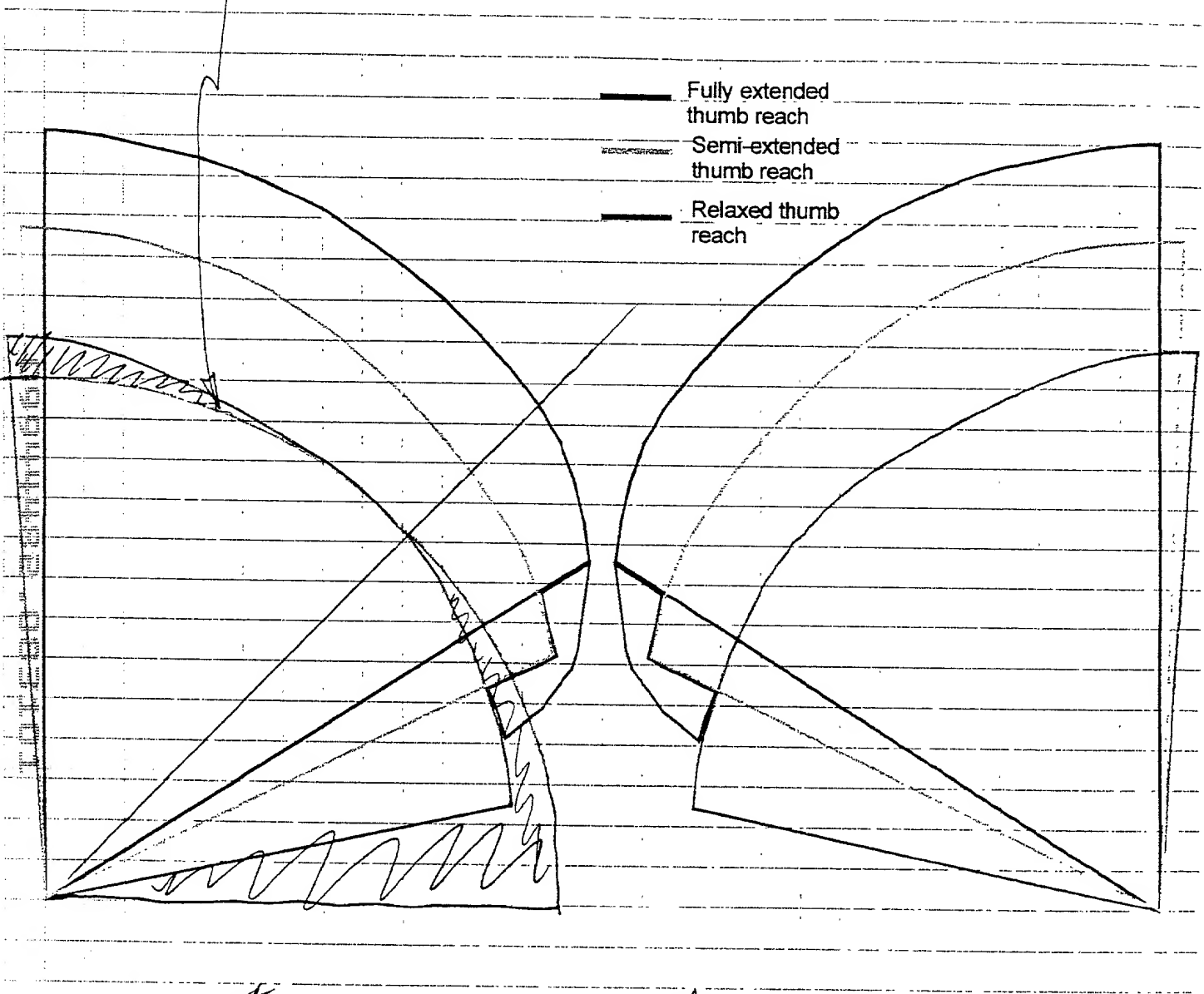
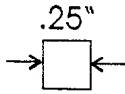
Notes: Each data point represents thumb tip at centerline of thumb
Left and right thumb envelopes are arbitrarily placed relative to each other to permit cutting or measurements without overlapped reach lines

Located vertically over point of thumb base contact with corner, at midpoint of lower corner radius on device

Fig 10R

C32

What
would
happen
with
circular
arcs.

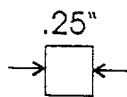


95th
1st Percentile Combined Thumb Sweeps, ^{-males} Females Age 12-19
(Uniform object thickness 0.75", corner radius 1.5")

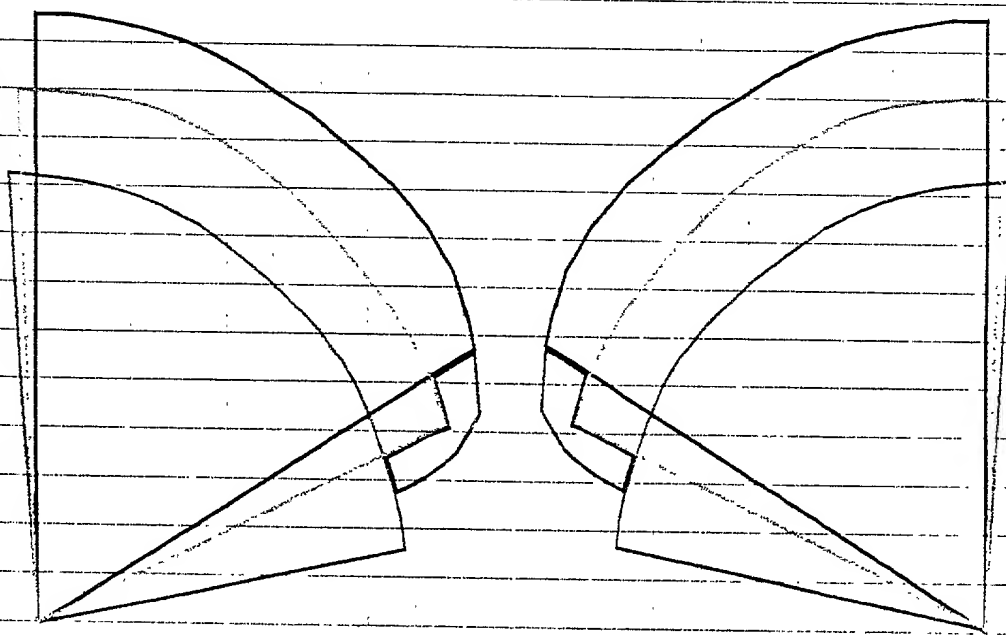
Note: each data point represents thumb tip at centerline of thumb

* Located vertically over point of thumb base contact with corner,
at midpoint of lower corner radius on device

Fig 10 S



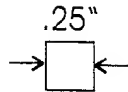
- Fully extended thumb reach
- Semi-extended thumb reach
- Relaxed thumb reach







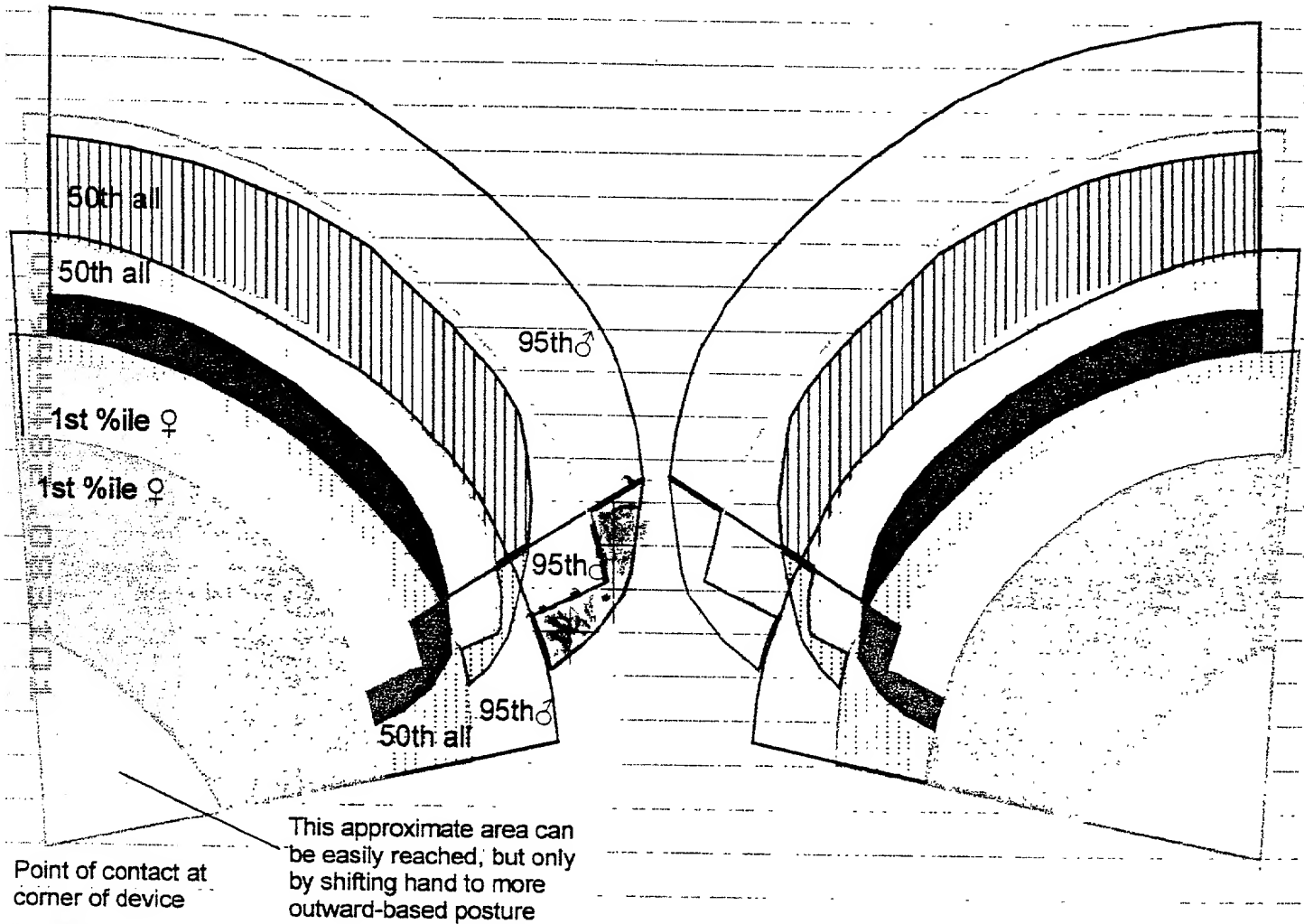
1st Percentile Combined Thumb Sweeps, Females Age 12-19
(Uniform object thickness 0.75", corner radius 1.5")

Notes: Each data point represents thumb tip at centerline of thumb
Left and right thumb envelopes are arbitrarily placed relative to each other
to permit cutting or measurements without overlapped reach lines

Fig. 10T



-  Fully extended thumb reach
-  Semi-extended thumb reach
-  Relaxed thumb reach
-  Area reached with some difficulty while fully extended



Combined Thumb Sweeps, 1st Percentile Females Through 95th Percentile Males Age 12-19

(Uniform object thickness 0.75", corner radius 1.5")

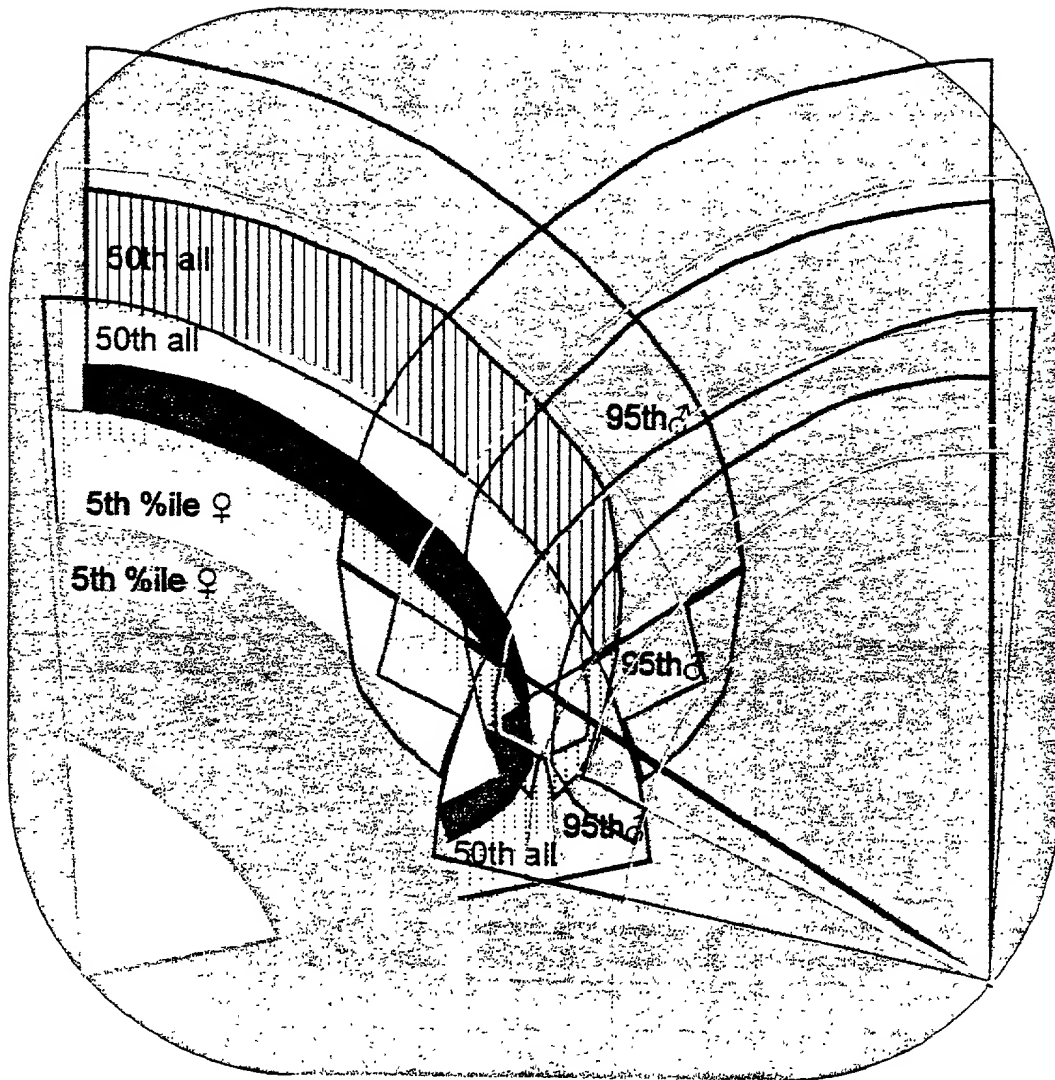
Notes: Each data point represents thumb tip at centerline of thumb
 Left and right thumb envelopes are arbitrarily placed relative to each other
 to permit cutting or measurements without overlapped reach lines

Fig 104

Located vertically over point of thumb base contact with corner,
 at midpoint of lower corner radius on device

C35

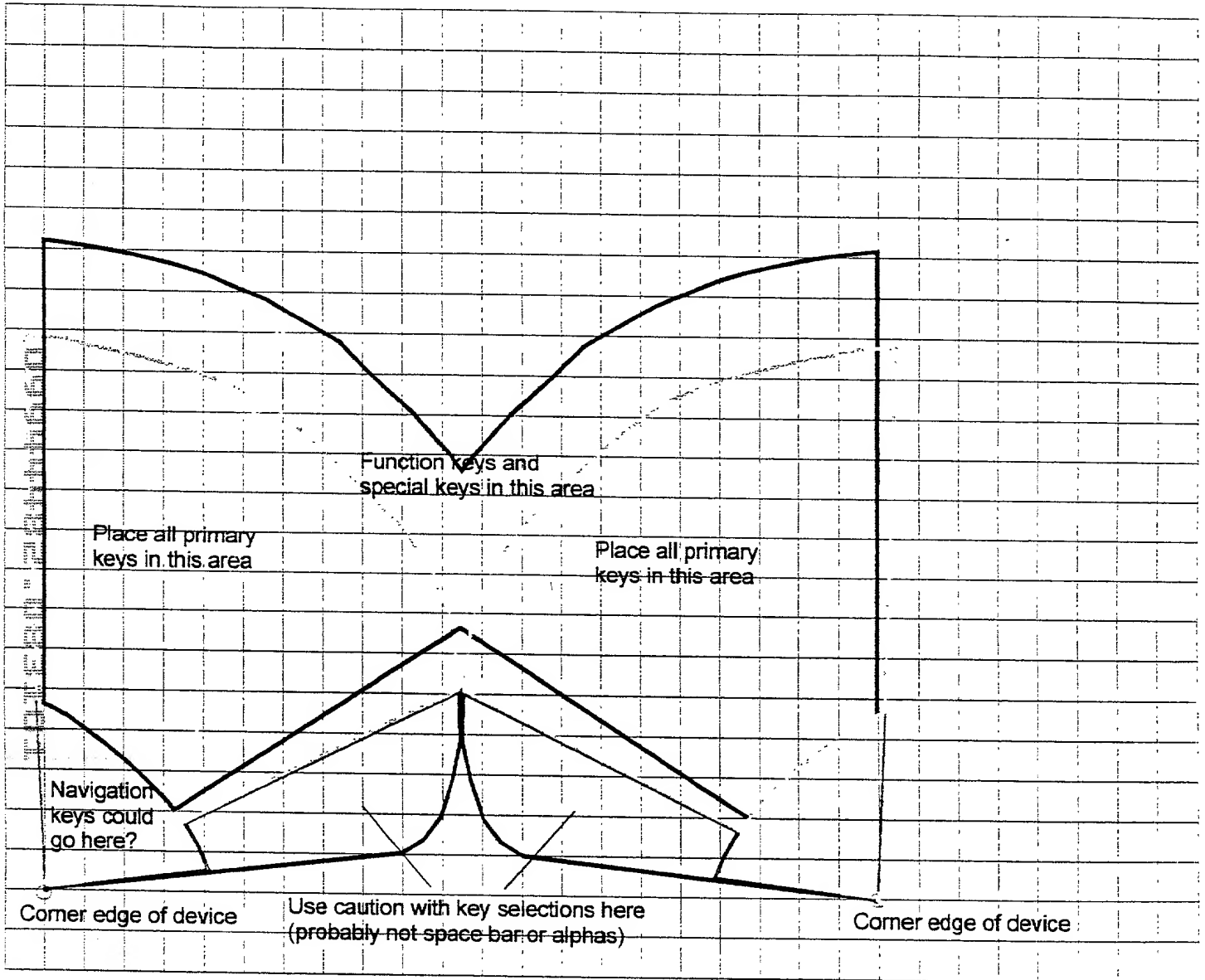
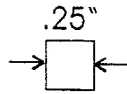
FOI EEO 2844660



Thumb sweeps on 1.5 corner template, 5.5"
(50th percentile relaxed reaches overlap 0.15 in.)

Fig 10V

C36



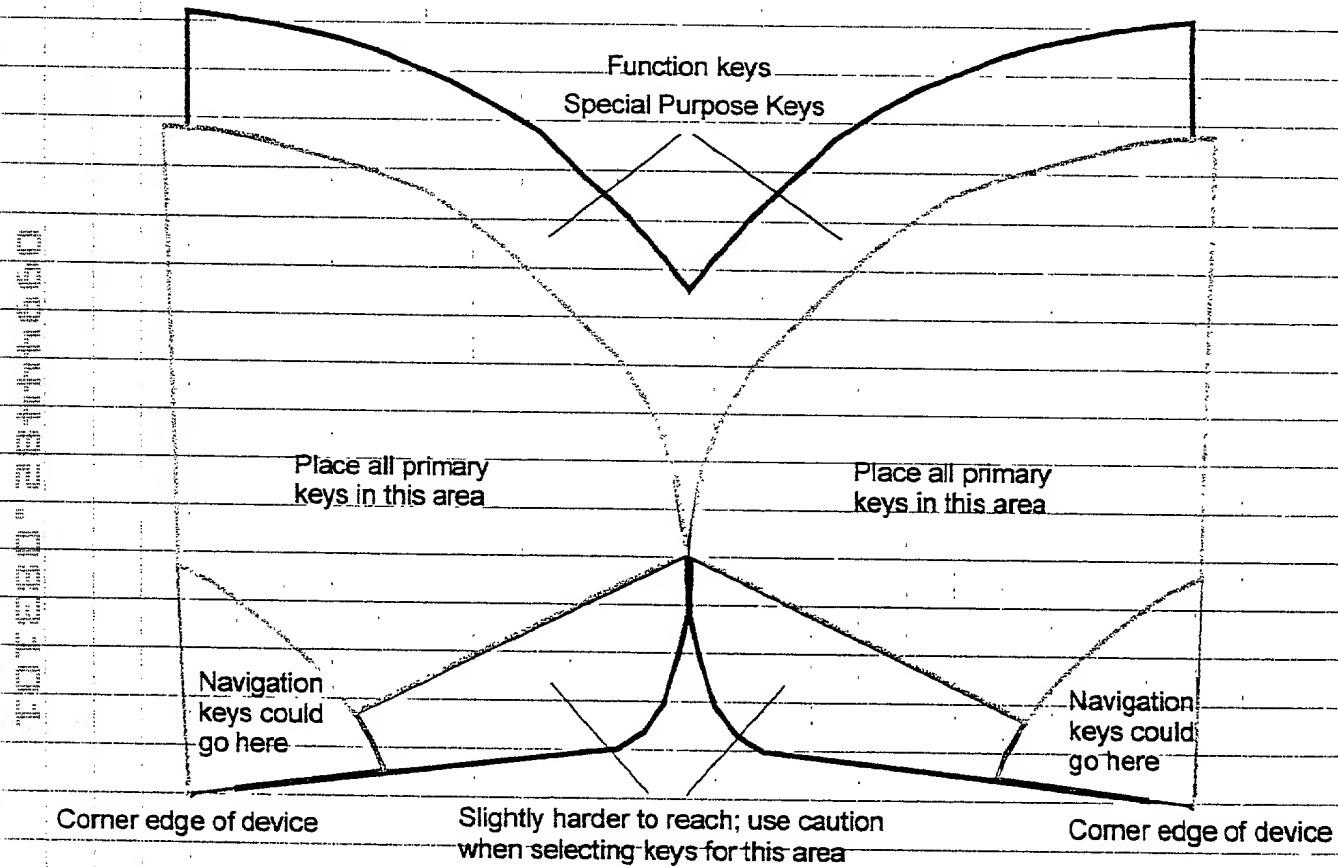
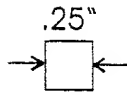
Key Placement Guidelines

(Uniform object thickness 0.75", corner radius 1.5")

Using 50th percentile semi-extended reach for primary keying area

Fig 10W

C37



Key Placement Guidelines

Device thickness 0.75" (uniform), corner radius 1.5" (plan view), corner radius approx. 1.0" (side view)

Notes:

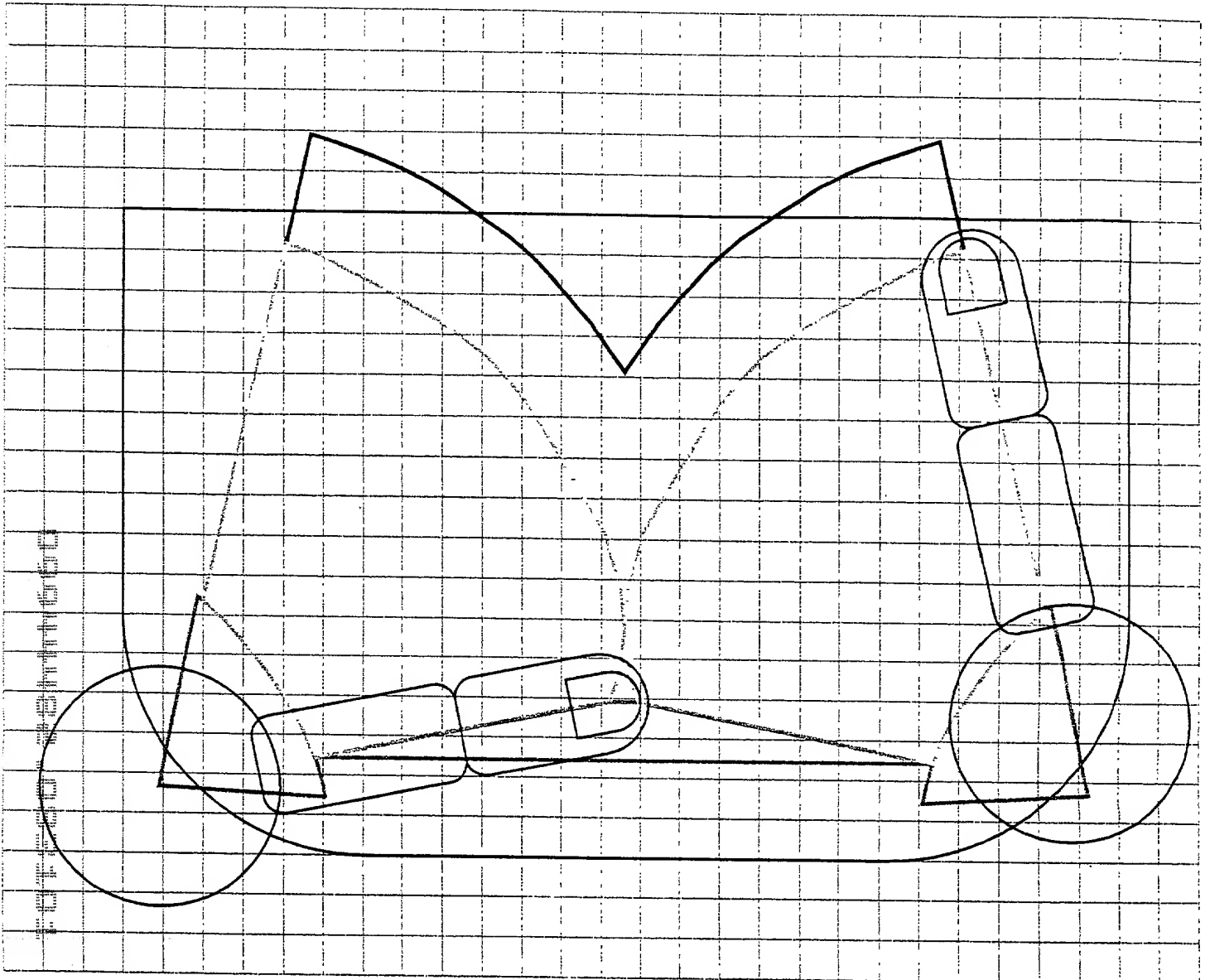
- For device thickness of 0.75 in., keying area width is approx. 5.5 in.
- Reach areas are valid for placement of thumbs at corner or along sides
- Smaller corner radii decrease reach areas but permit easier reach into blue areas
- Device thicknesses greater than 0.75 in. quickly decrease size of reach areas
- Reach plots generally indicate a device width of approx. 6.0 in.

Fig 10X

C38

.25"

Bole From Brook



combined male and female

1. Used reach envelope of 50% woman with relaxed grip (not pick or extended reach).
2. Drew geometry to represent the approx dims of 50% woman. Circle represents the palm at the base and crotch of the thumb.
3. Rotated the reach envelope approx 15° to more closely resemble the hand posture of holding a game controller.

Fig 10V

Automated Wrapping Process

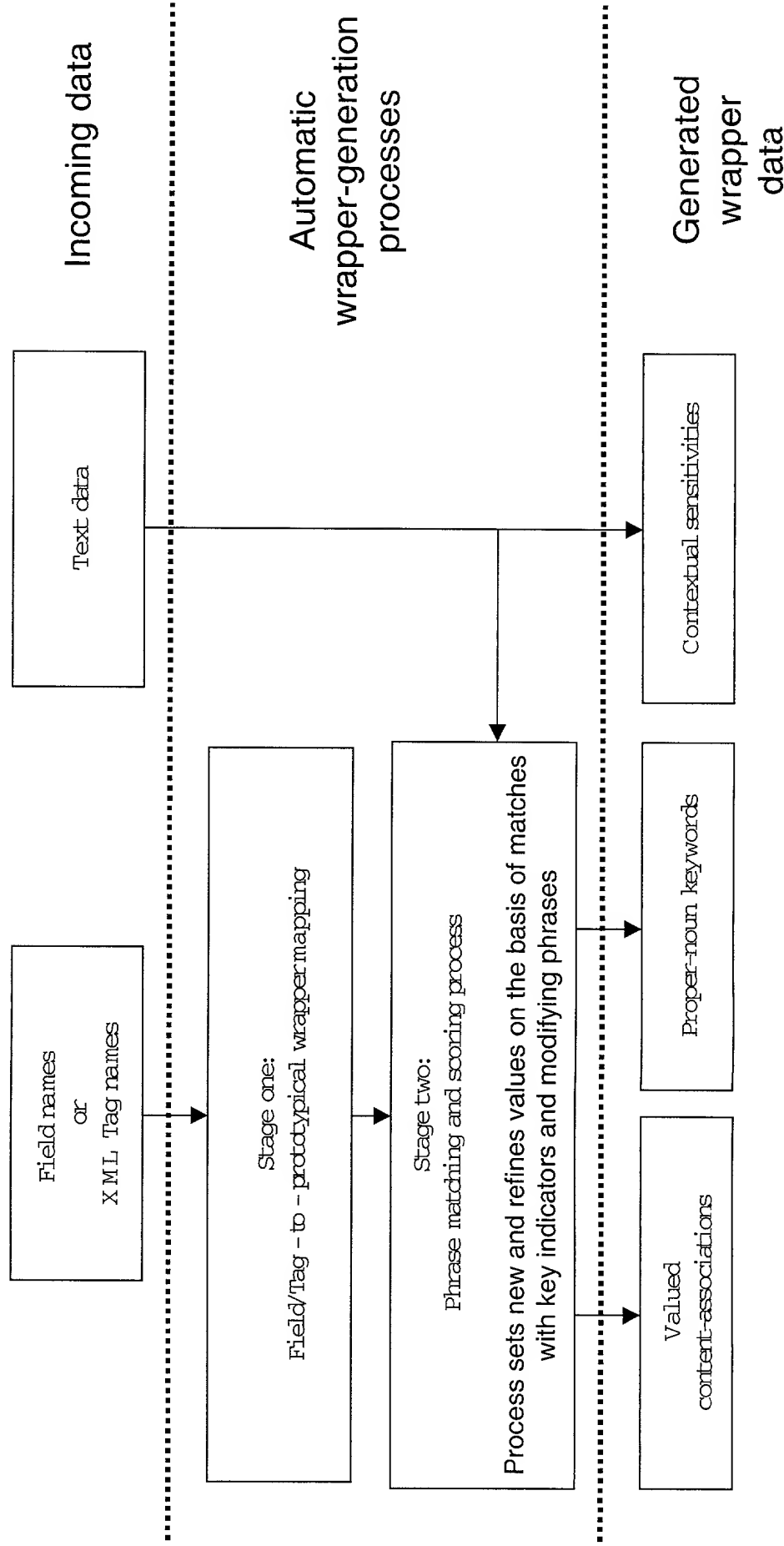


Figure 11

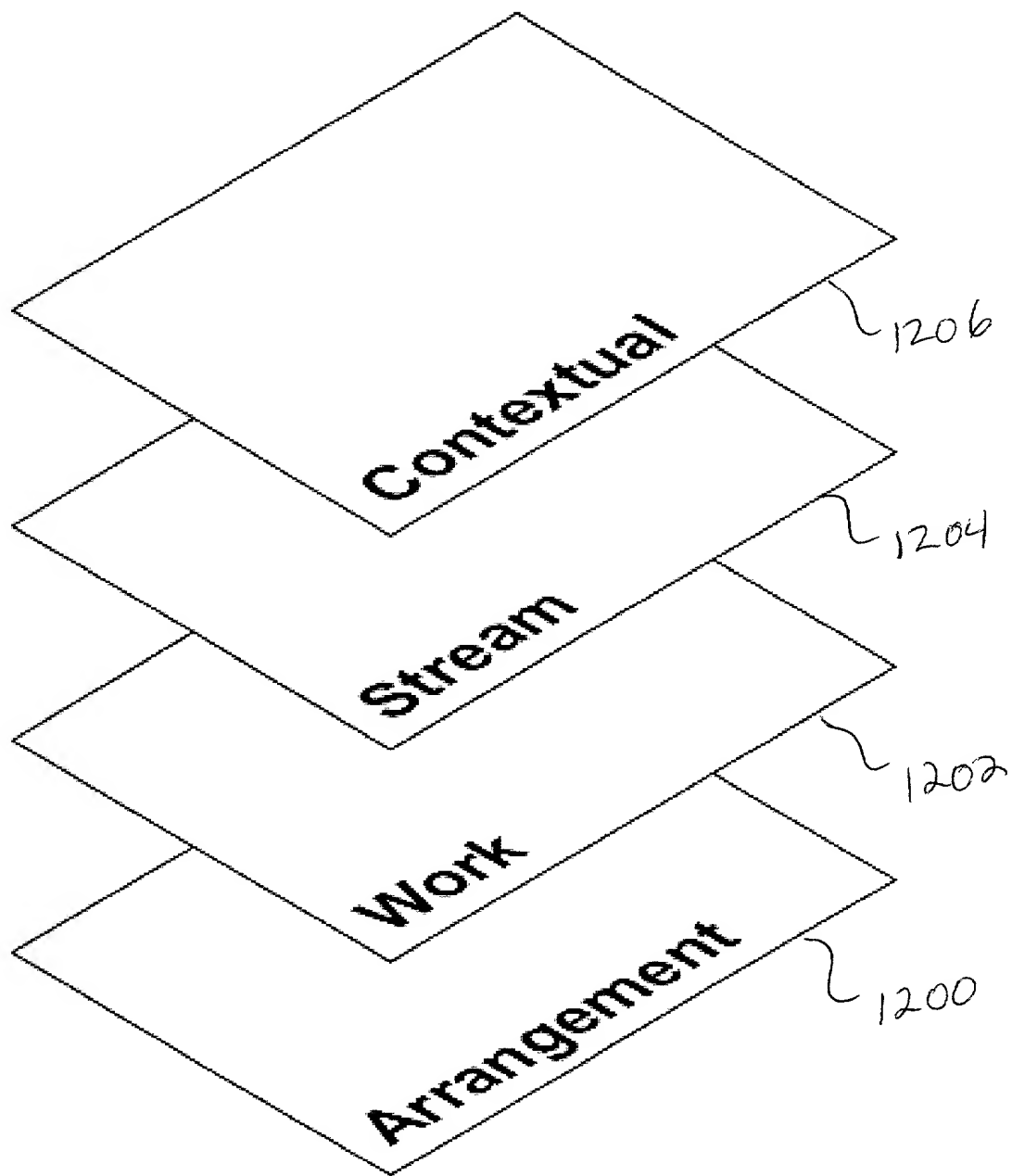


Fig. 12

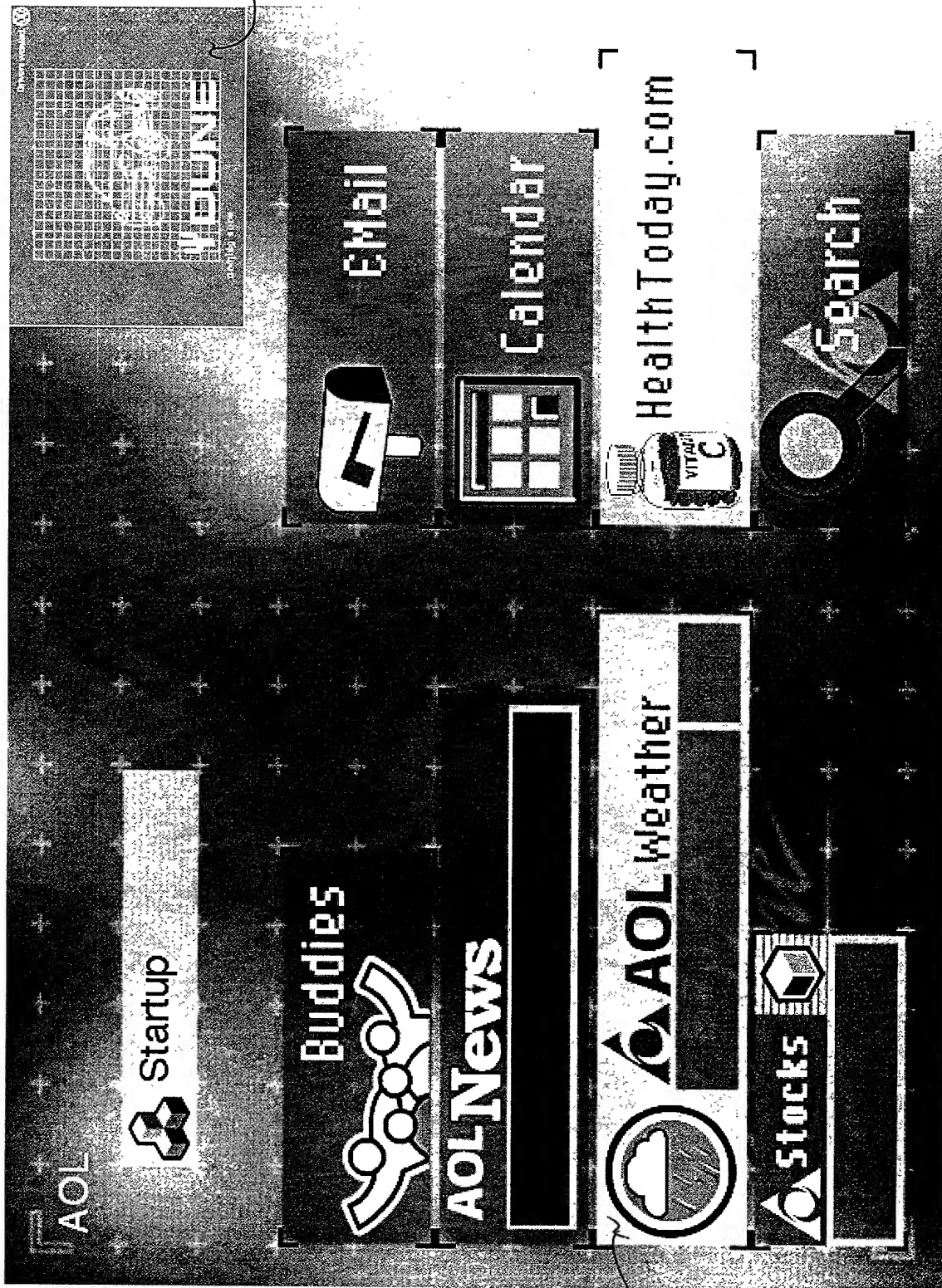


Fig. 13A

AOL

Slam!n

Bud

AOL News

Stocks

AOL Weather

Search Results

City or Zip

(example: 60601 or Chicago, IL)

Type ☐ Fahrenheit ☒ Celsius

▲ Send

☒ Close

Fig 130

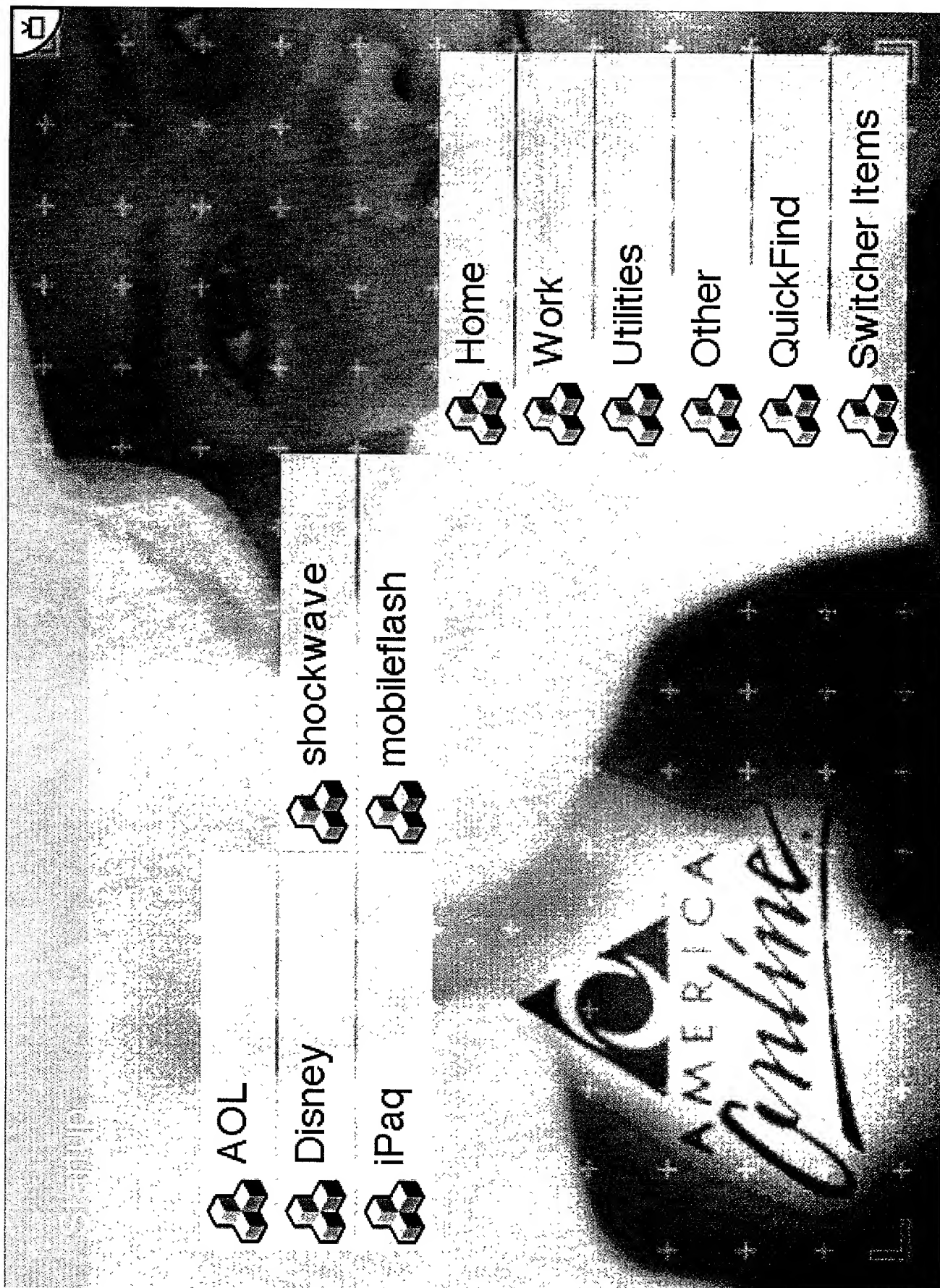


Fig. 14A

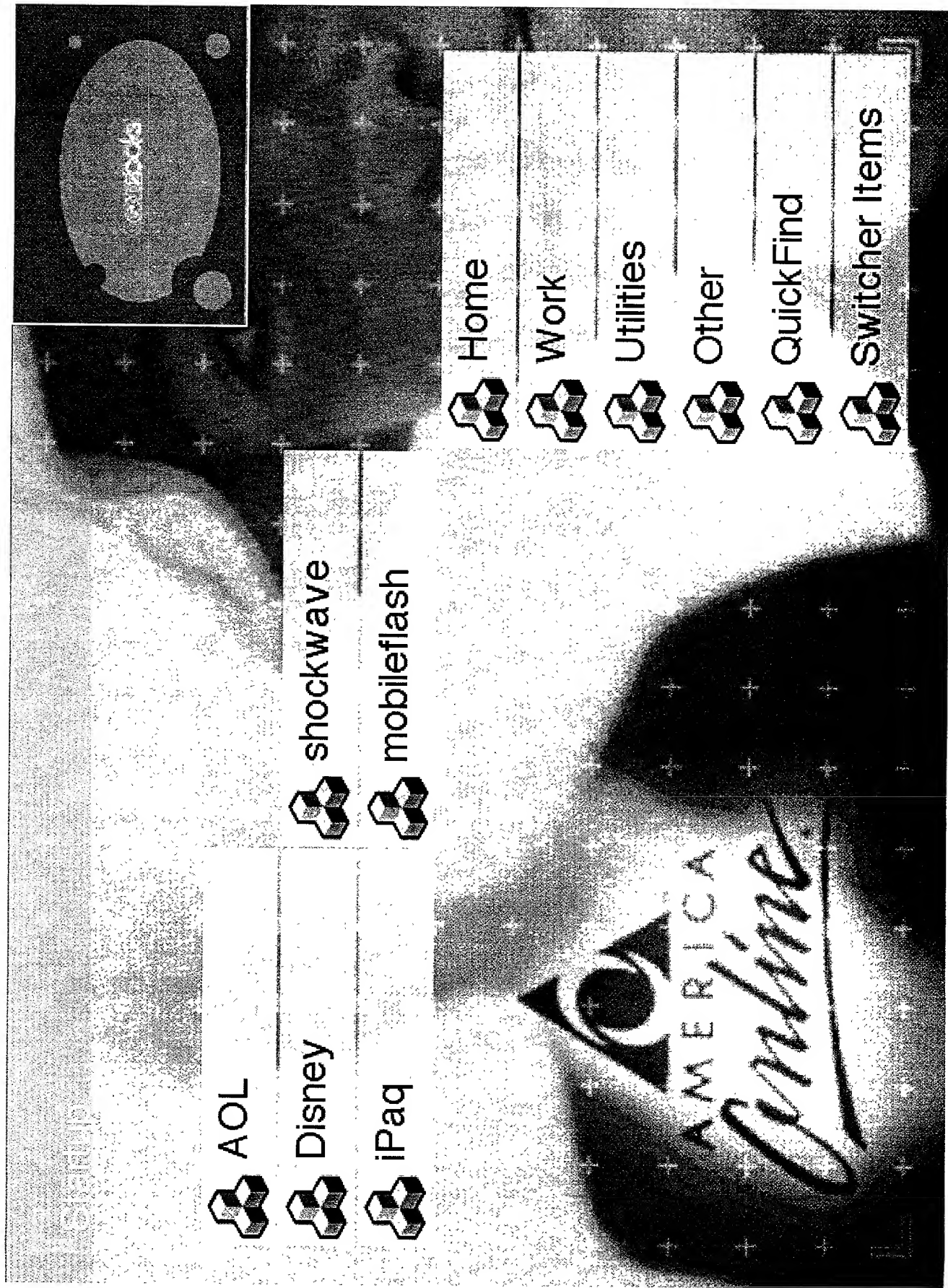


Fig 14B

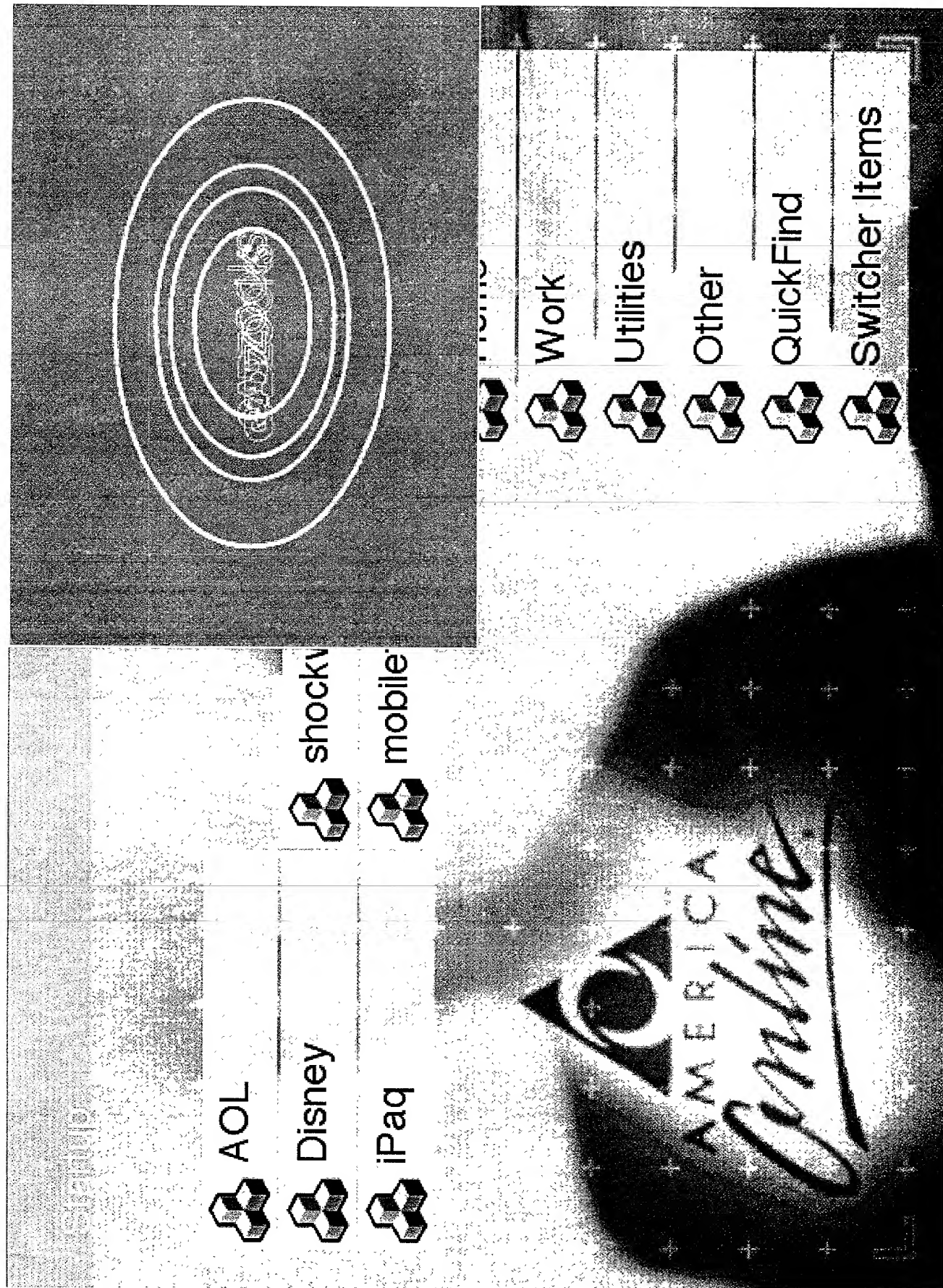


Fig 14C

TOEBO" 28444660

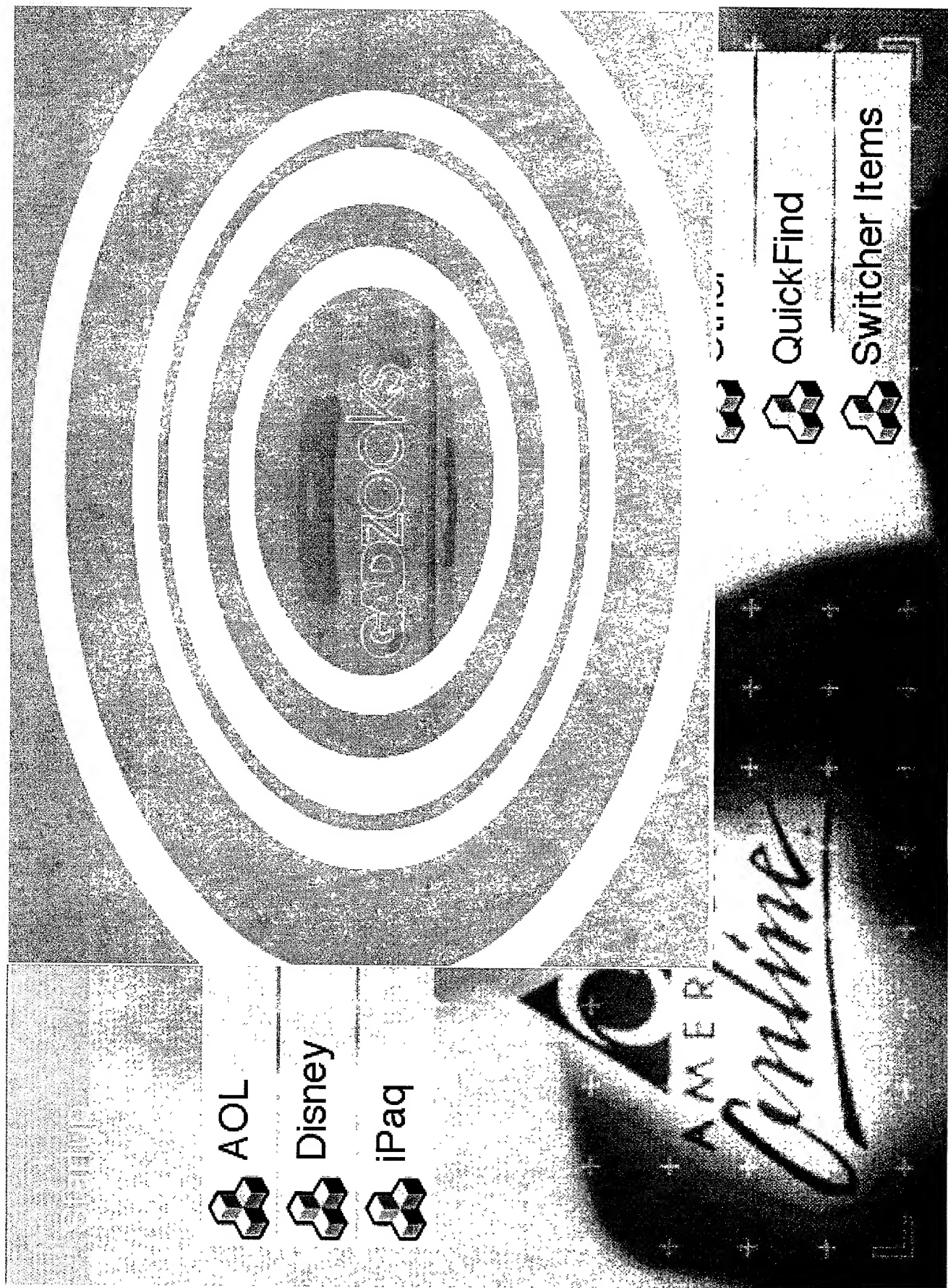


Fig 14D

094443 03.D
T01E80" 23444650

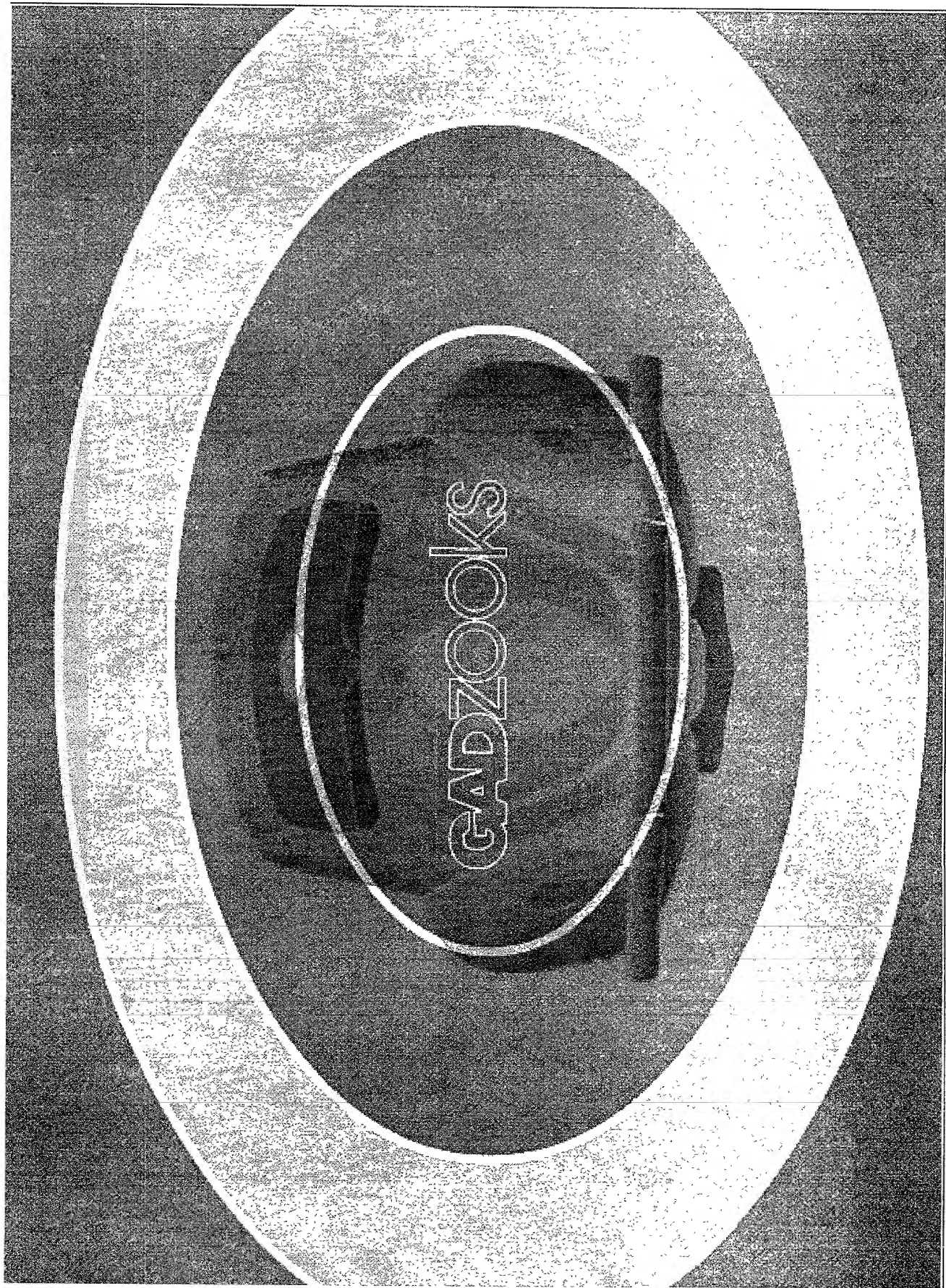


Fig 14E

058744433 "033101"
1850

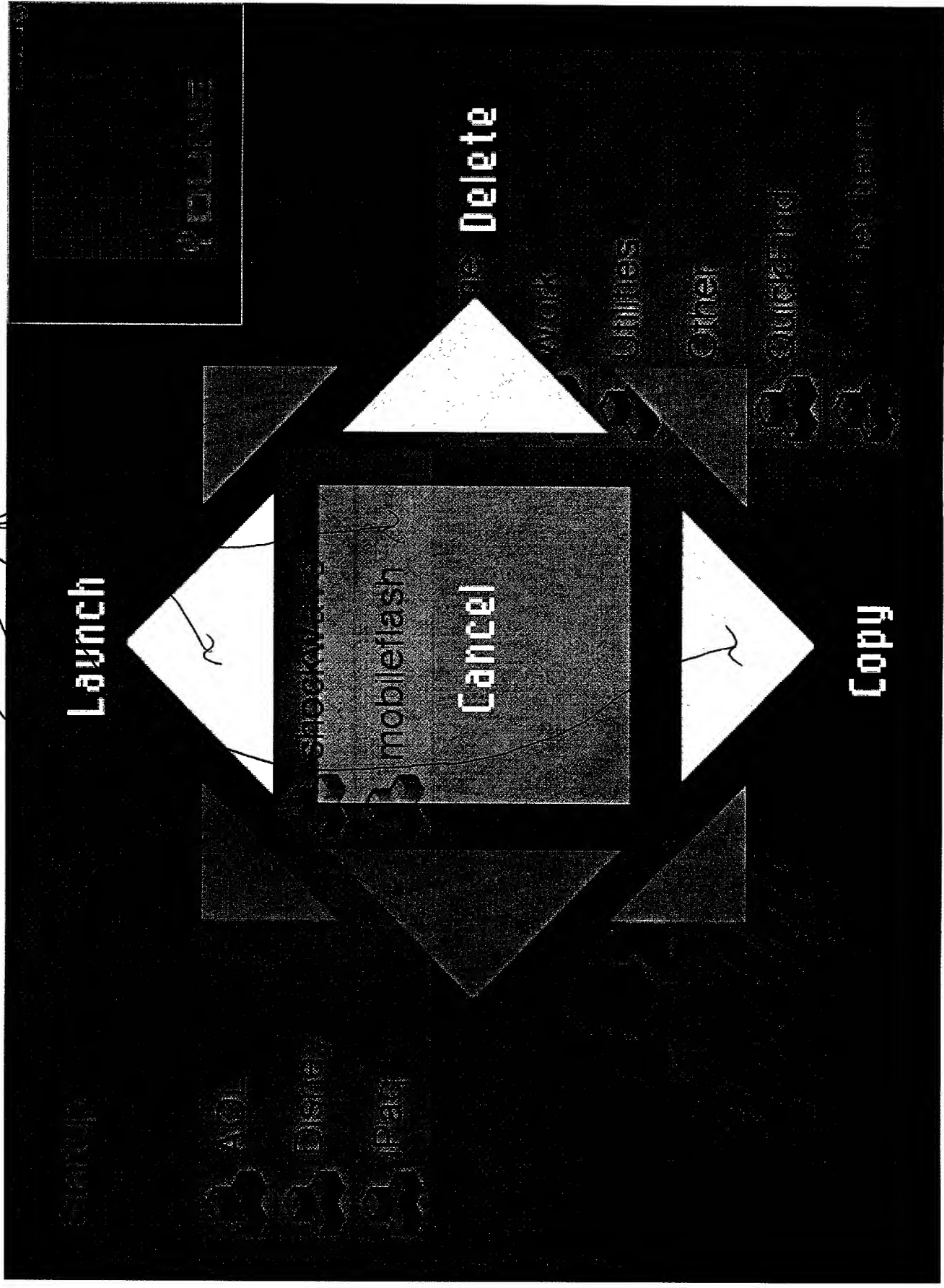


Fig. 15

1860

August 2001

s	m	t	w	t	f	s
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

Close

Close

Fig 16

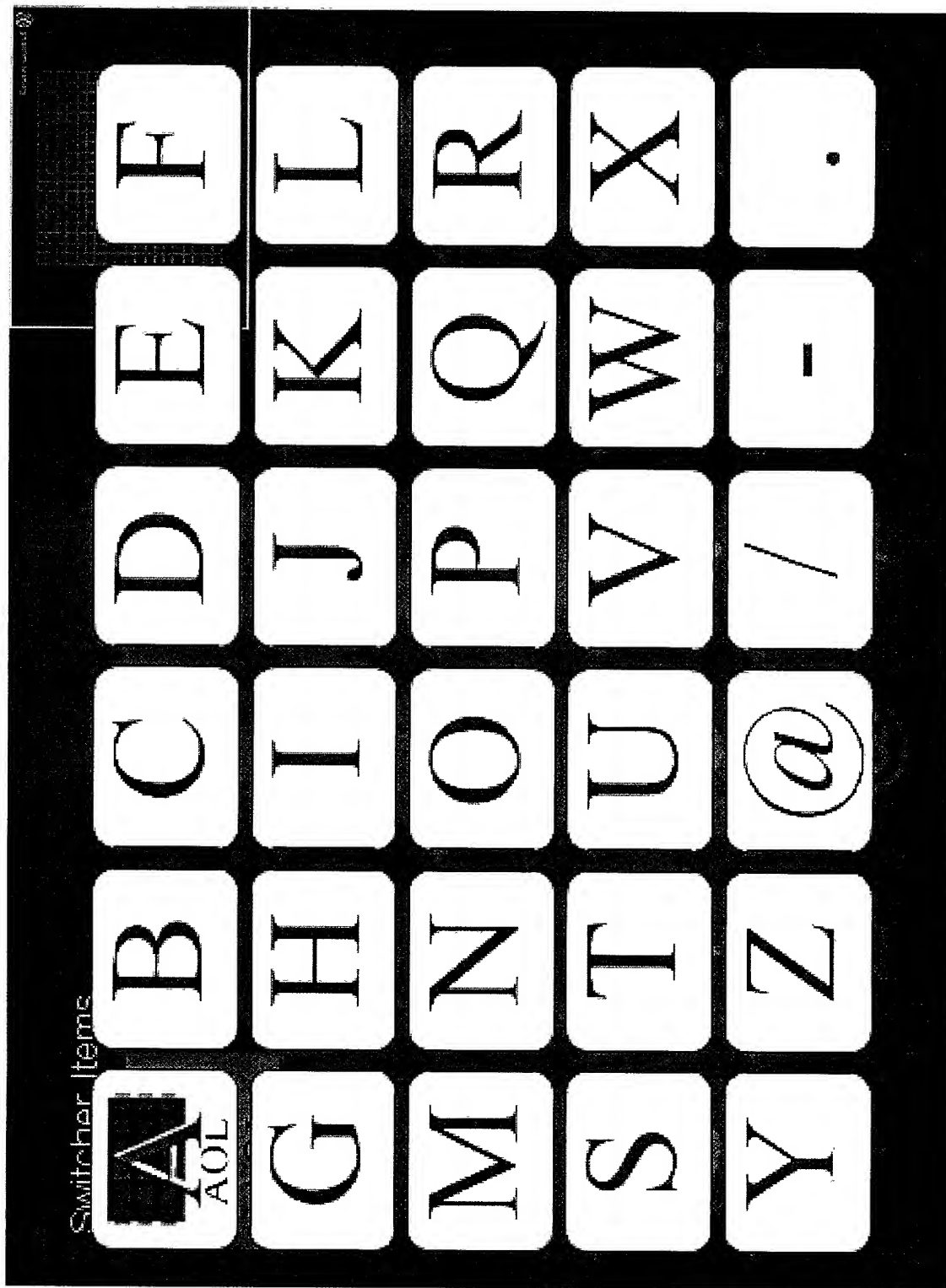


Fig. 17A

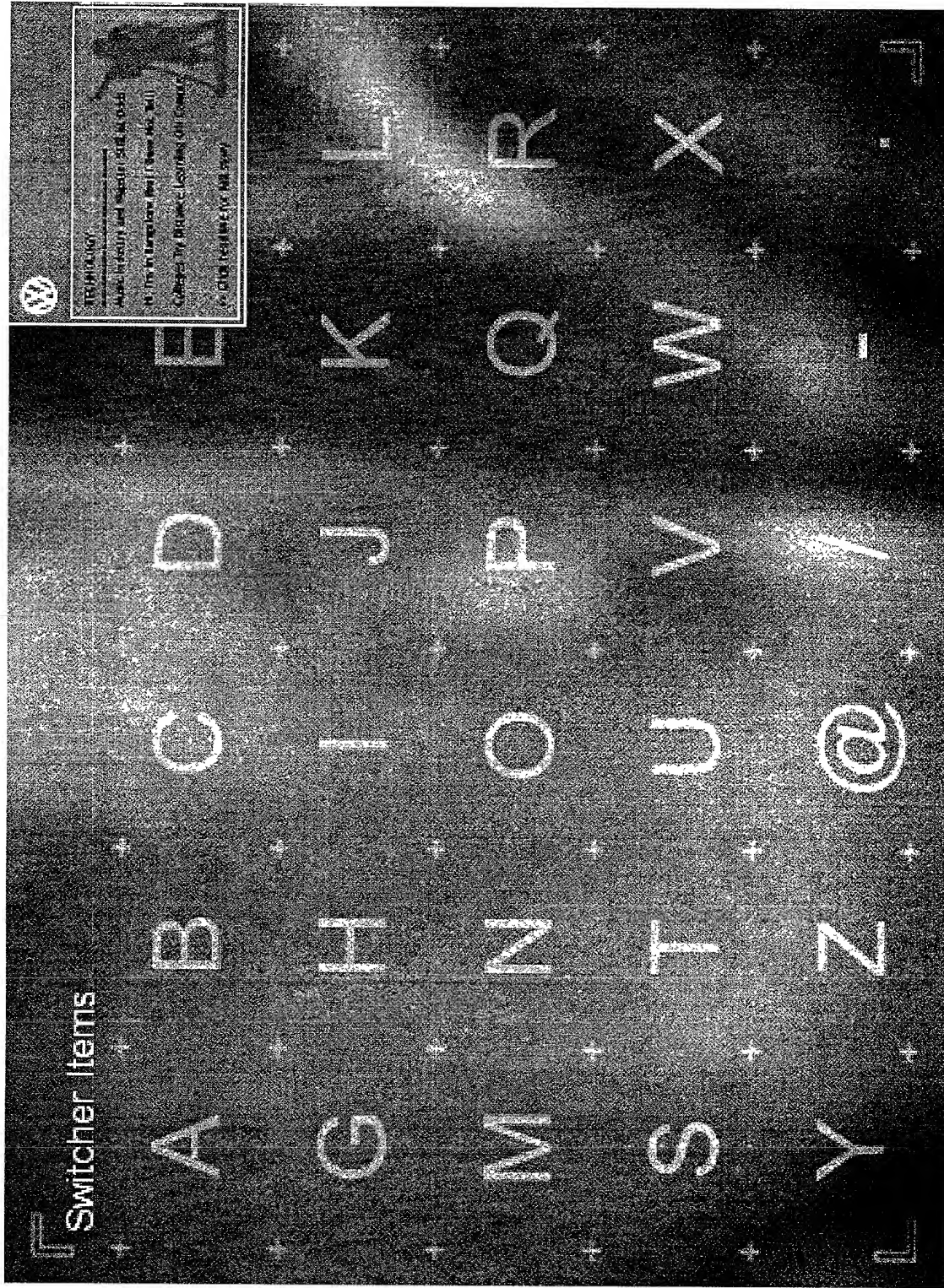


Fig 17B

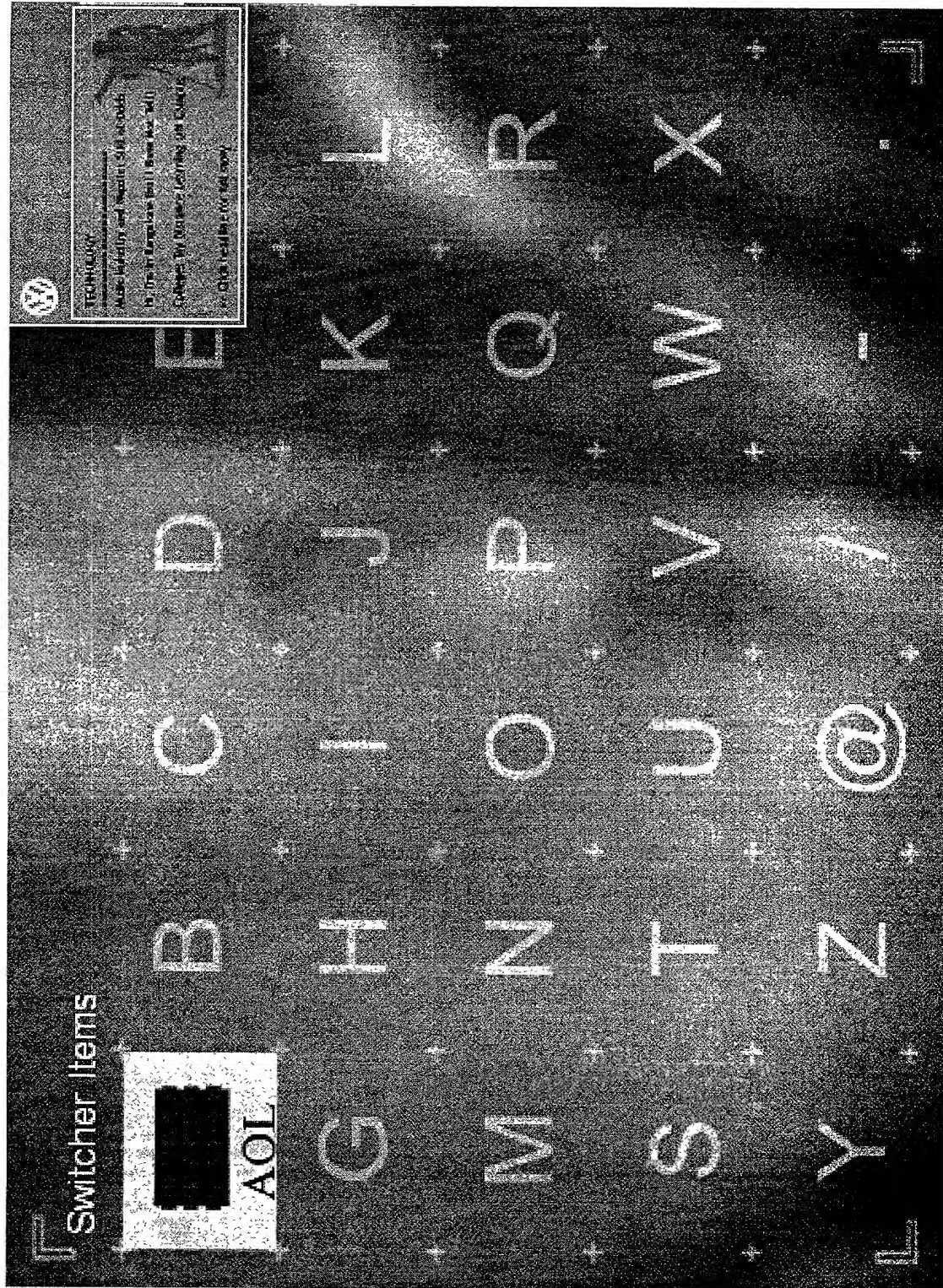


Fig 170

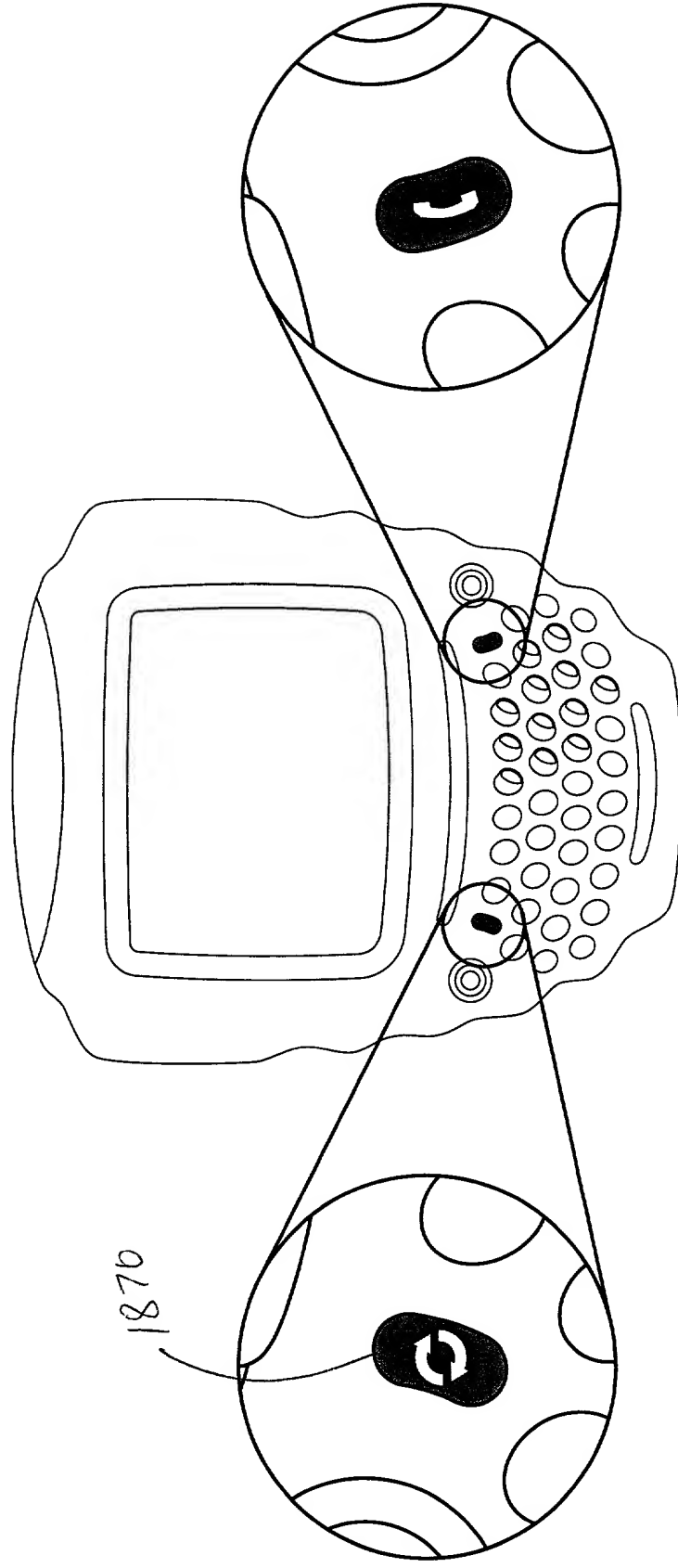


Fig 17D

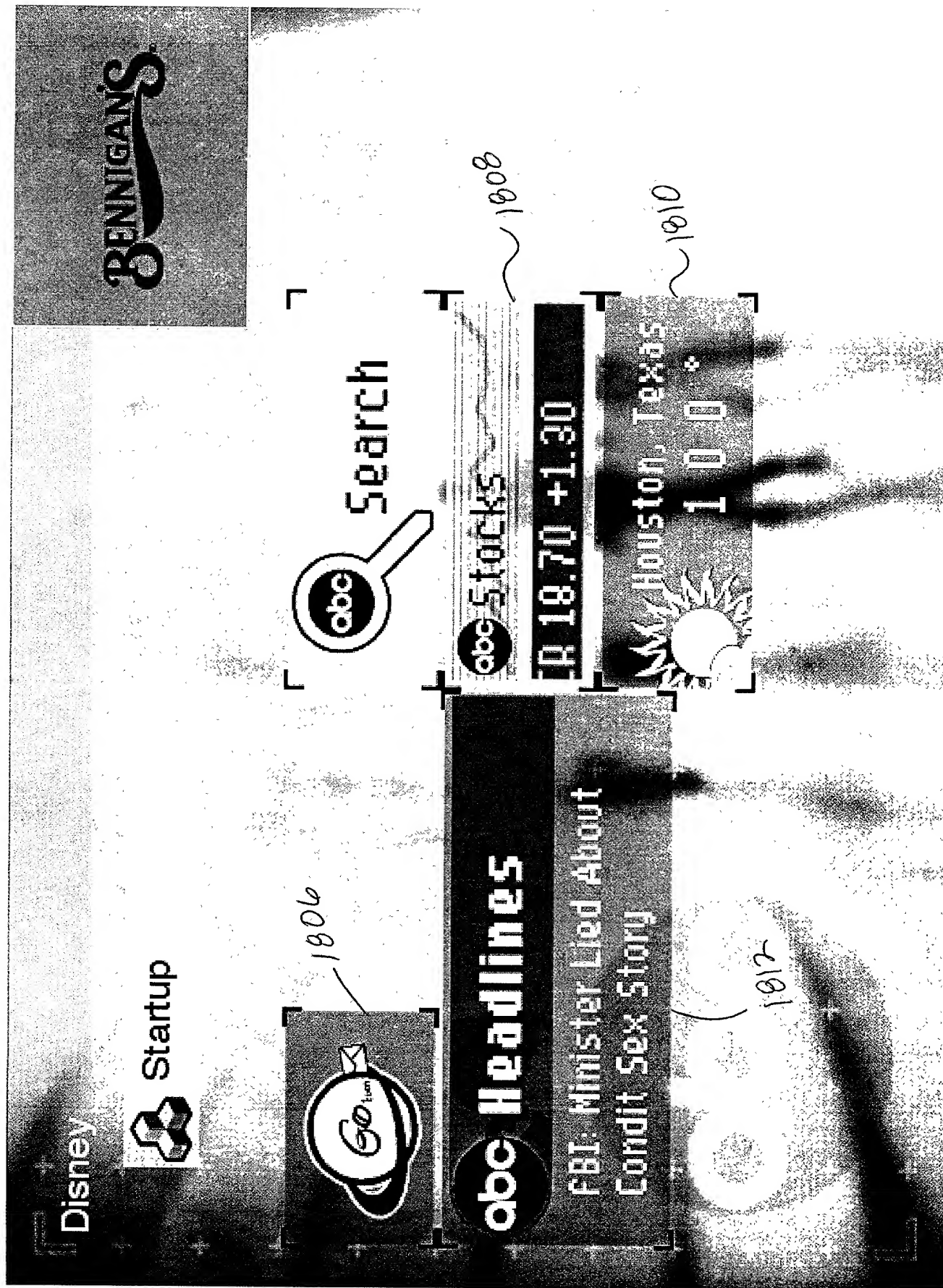


Fig. 18A

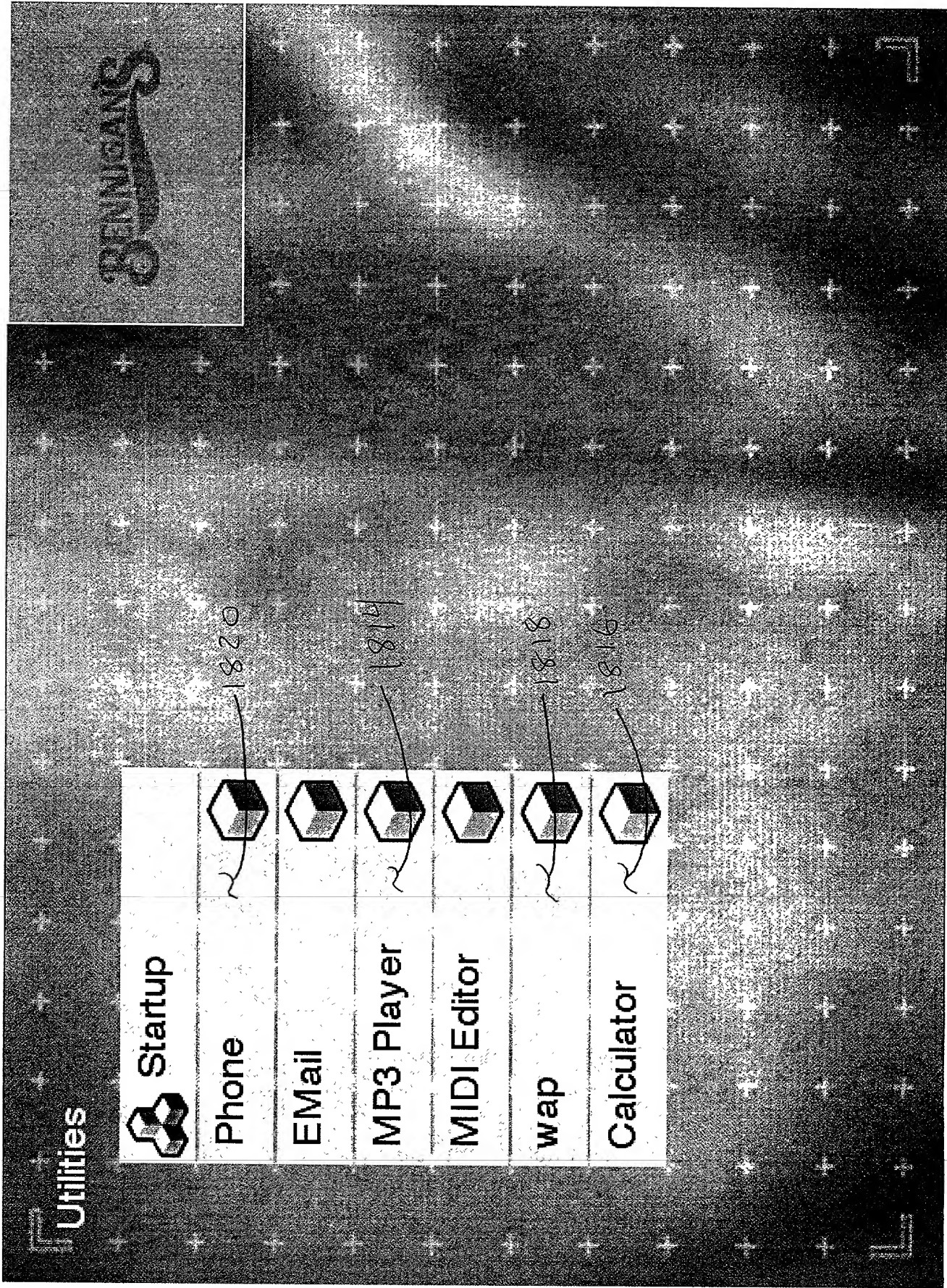


Fig 18B

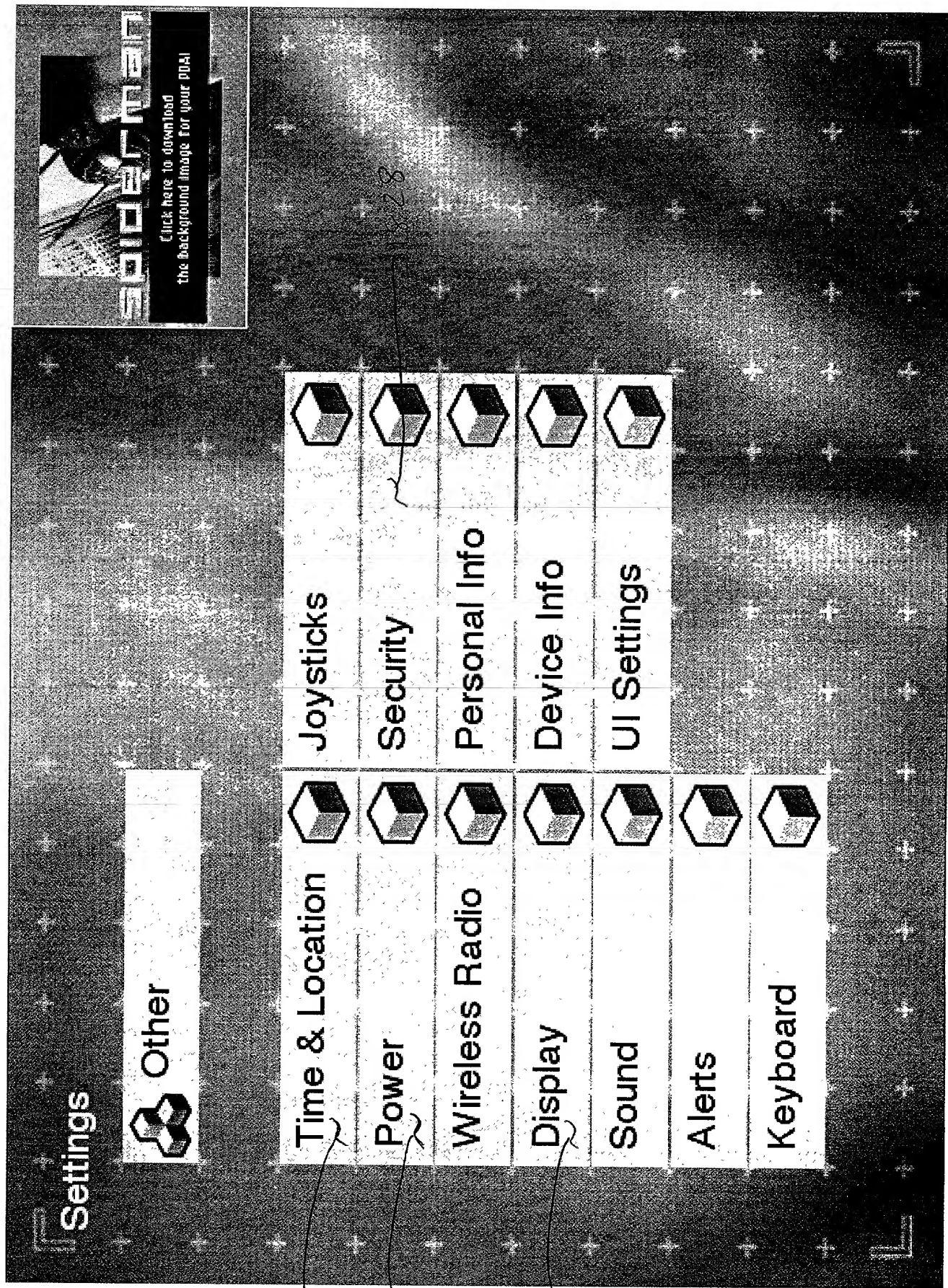


Fig 18c

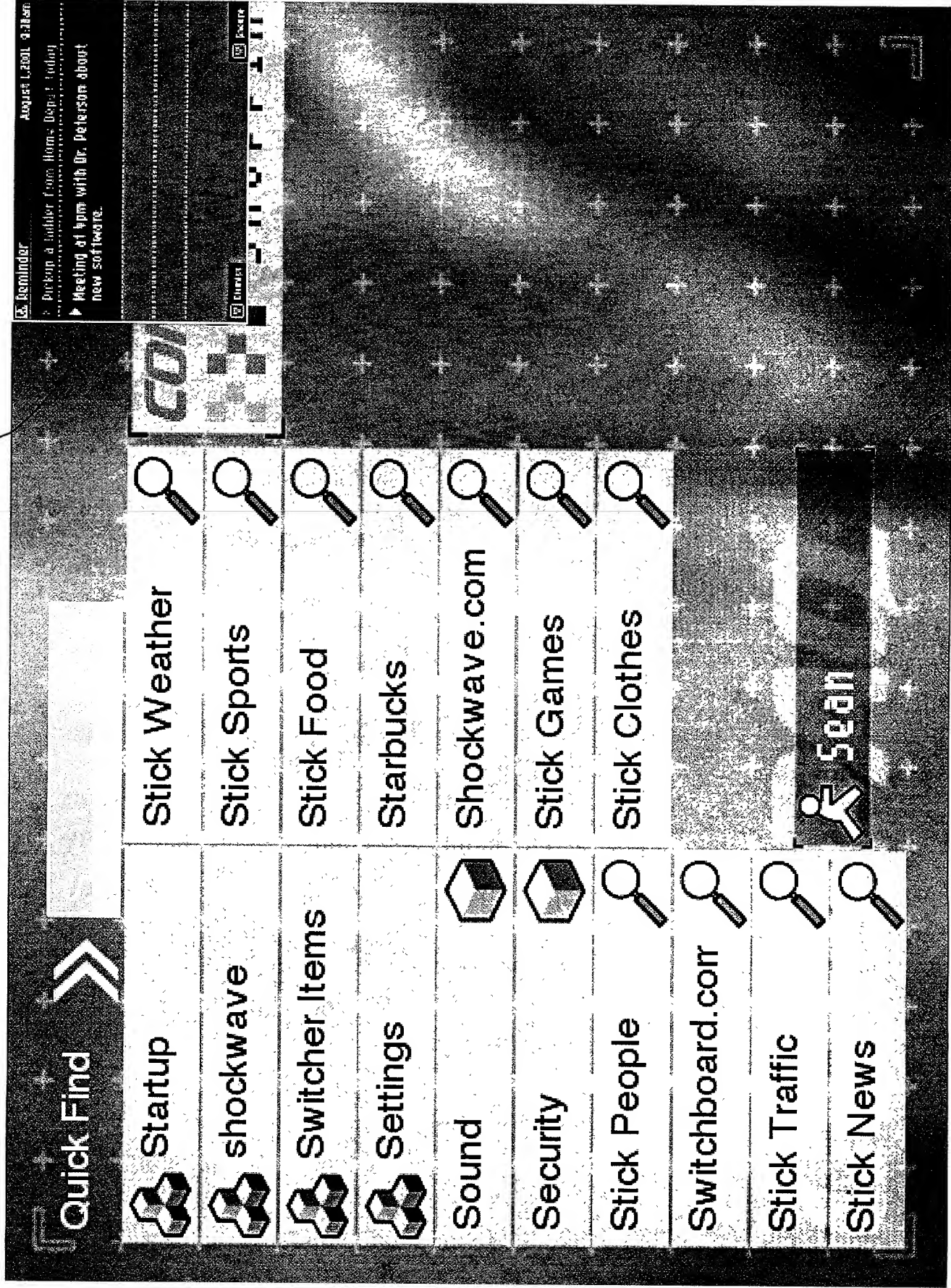


Fig 18D

1800

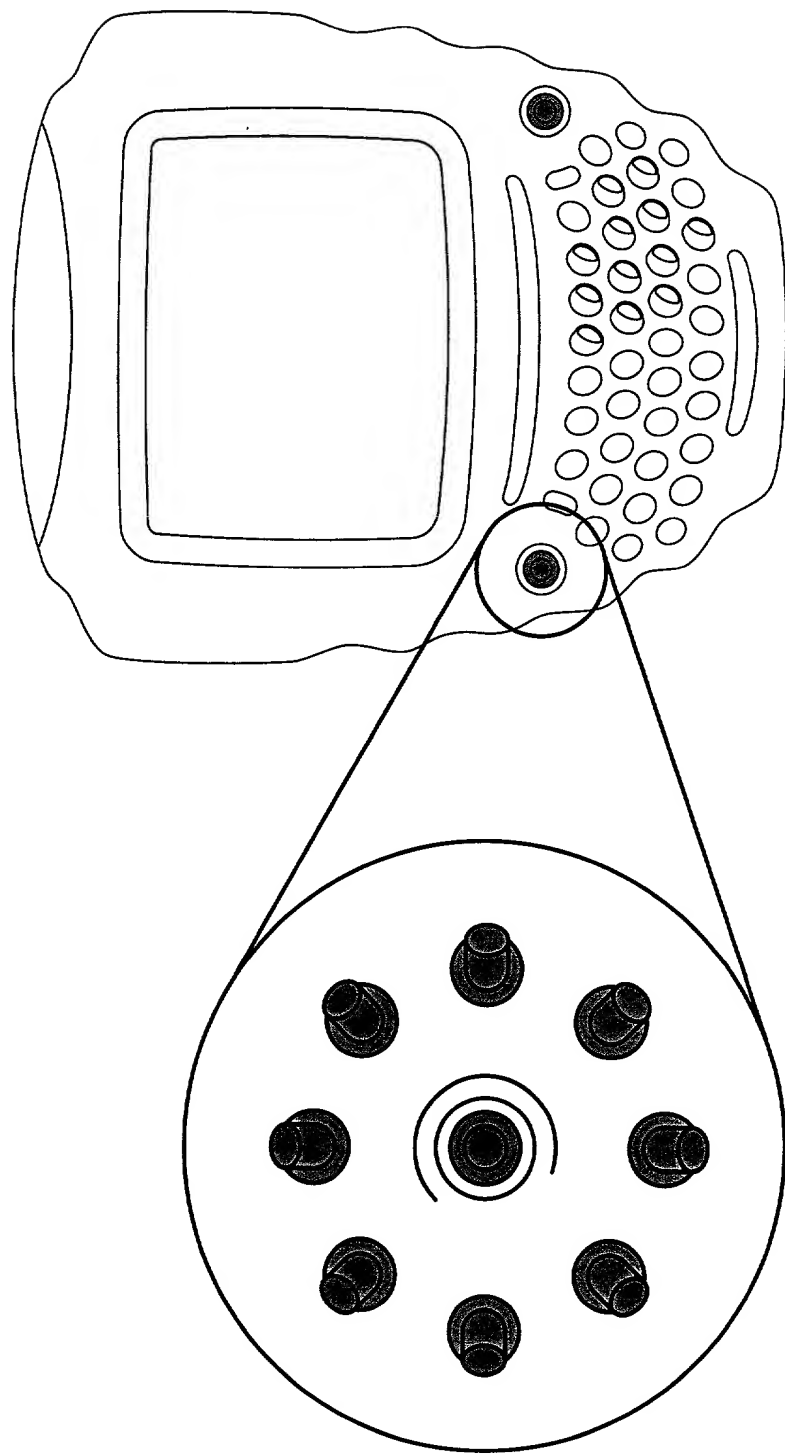


Fig. 19